

TOXNET

Toxicology and Environmental Health Information

from the National Library of Medicine (NLM)

and Other Sites

February 2006



Presented by

NLM's Toxicology and Environmental Health Information Program

part of the Division of Specialized Information Services

Contact:

Toxicology and Environmental Health Information Program

Division of Specialized Information Services

National Library of Medicine

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301-496-1131

301-480-3537 (FAX)

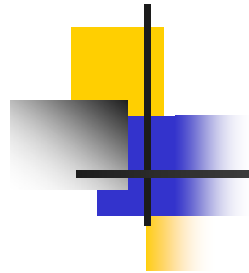
Web site: <http://sis.nlm.nih.gov/>

Contact: tehip@teh.nlm.nih.gov



Class Schedule

Part I	Introduction	9:00 - 9:15
Part II	ChemIDplus	9:15 - 9:45
	Exercises (II)	9:45 -10:15
	Break	10:15 -10:30
Part III	TOXNET Overview, HSDB & Related Files	10:30 -11:30
	Exercises (III)	11:30 -12:00
	Lunch	12:00 - 1:00
Part IV	TOXLINE and Other Bibliographic Files	1:00 - 1:30
Part V	TRI, Specialty Files, New Initiatives	1:30 - 2:15
	Exercises (IV, V)	2:15 - 2:45
	Break	2:45 - 3:00
Part VI	Non-NLM Resources	3:00 - 3:30
	Exercises (VI)	3:30 - 4:00



Part I

Introduction



Toxicology and Environmental Health Information Program (TEHIP)

Background

- Poisons recognized throughout time.
- Socrates - hemlock. Cleopatra - asp.
- Lucretia Borgia
- Harvey W. Wiley's Poison Squad – 1903
- The Jungle (1906) Upton Sinclair – lack of hygiene in the meat-packing industry
- Food and Drugs Act (1906) – prohibited adulterated or misbranded items
- Federal Food, Drug and Cosmetic Act (1938) – enhanced safety requirements for drugs
- Drug Amendments (1962) – effectiveness required for drugs
- Silent Spring (1962) Rachel Carson – sparked public awareness about hazards of synthetic chemicals
- President's Science Advisory Committee (1966) – “Report on the Handling of Toxicological Information”
- TEHIP Created (1967)
- Situated within NLM's Division of Specialized Information Services



TEHIP Mission

- Provide selected core toxicology and environmental health information resources and services
- Facilitate access to national and international toxicology and environmental health information resources
- Strengthen the information infrastructure of toxicology and environmental health

So...TEHIP

- Builds and/or makes available free online Web-based databases
- Creates other Web-based resources
- Collaborates with government agencies and others
- Addresses a spectrum of user needs, from the personal to the professional
- Is active in public training and outreach



TEHIP Databases

- TOXNET System of Databases (including ChemIDplus and Specialty Databases)
- DIRLINE (directory of organizations)

Additional TEHIP Resources

- Special Topic Guides – arsenic, biological & chemical warfare agents, etc.
- Publications (including Glossary of Terms Used in Toxicology)
- ALTBIB - Alternatives Bibliography
- Toxicology Tutor

Other Relevant NLM Information

- PubMed/MEDLINE
- MedlinePlus (consumer health, includes drug information)
- Clinical Trials
- NLM Gateway – Multi-File Searching – Planned to go across all NLM Files



SIS Specialized Information Services

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The Specialized Information Services (SIS) Division of the National Library of Medicine (NLM) is responsible for information resources and services in toxicology, environmental health, chemistry, HIV/AIDS, and specialized topics in minority health.



► Environmental Health & Toxicology

Databases and other resources related to toxicology and environmental health
Features TOXNET



► Chemical Information

Databases and other resources designed to help search for information by chemical name or structure
Features ChemIDplus: [Lite](#) and [Advanced](#)



► HIV/AIDS

Links to journal literature, clinical trials and treatment information, meeting abstracts, and other scientific and consumer-related resources



► Outreach Activities & Resources

Programs, resources and web sites for minority and other specific populations



► Directory of Health Organizations

Features DIRLINE and Health Hotlines

More to Explore

[SIS News](#)
[Lead and Human Health](#) **NEW!**
[Tox Town Farm Scene](#) **NEW!**
[Staff Directory](#)
[Fact Sheets](#)
[WISER](#)
[WebWISER](#) **NEW!**
[TOXMAP](#)
[TOXNET FAQs](#)
[ToxSeek](#) **NEW!**

Additional NLM Sites

[MEDLINE/PubMed®](#)
Search journal literature

[MedlinePlus®](#)
Consumer health information

[NLM Gateway](#)
Search multiple NLM databases

[Health Services Research & Public Health Information Programs](#)

[Bookshelf](#)
Search selected biomedical books



Environmental Health and Toxicology

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Environmental Health and Toxicology

Topics

- ▶ Chemicals and Drugs
- ▶ Diseases and the Environment
- ▶ Environmental Health
- ▶ Occupational Safety and Health
- ▶ Poisoning
- ▶ Risk Assessment and Regulations
- ▶ Toxicology
- ▶ Lead and Human Health **NEW!**

Especially for

- ▶ The Public
- ▶ Researchers/Scientists
- ▶ Health Professionals
- ▶ Students/Educators
- ▶ Emergency Responders

Reference Tools

A to Z List of Resources
Database Manual
News
Calendar of Events
FAQ List

Listservs:

NLM-TOX-ENVIRO-HEALTH-L
WISER - Wireless Information System for Emergency Responders

MedlinePlus® Environmental Health e-mail Announcement List

More Chemical Information
Publications and Reference Materials

List of NLM Databases and Resources

More to Explore

ToxSeek **NEW!**
Tox Town
Enviro-Health Links
WISER
WebWISER **NEW!**
ALTBIB
Toxicology Tutorials
Toxicology Web Links
Education and Career Links
Fact Sheets
Database Descriptions
MedlinePlus: Consumer Environmental Health Information
DIRLINE®
Public Health Information
Health Services Research & Public Health Information Programs
Bookshelf

TOXNET®

Collection of databases on hazardous chemicals, toxic releases, and environmental health

Search TOXNET for:

Search

Search a single database:

ChemIDplus	IRIS
CCRIS	ITER
DART	TOXLINE
GENE-TOX	TOXMAP
Haz-Map	TRI
Household Products	
HSDB	

TOXNET FAQs

Featured Site

New Enviro-Health Links resource on Lead and Human Health



National Institute of Environmental Health Sciences: The primary NIH organization for environmental health research



Directory of Health Organizations

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[SIS Home](#) >

Search DIRLINE

Search: ☒ all of the words ☐ any of the words ☐ exact phrase

Fields: (if none checked, all fields will be searched.)

- ☐ Organization name or acronym
- ☐ MeSH Headings/Keywords

Select records containing:

- ☐ Only organizations with toll-free numbers
- ☐ Only organizations with services for the hearing impaired



Health Hotlines

Toll-free numbers for
over 300 organizations

Other NLM Resources

[MedlinePlus®](#)
[PubMed](#)
[NLM Gateway](#)
[LocatorPlus](#)

Support Pages

[Help](#)
[Fact Sheet](#)
[Disclaimer](#)
[Suggestion Form](#)



DIRLINE Search Results

[SIS Home](#)[DIRLINE](#)

Items **1** through **20** of **47**

Pages: [1](#) [2](#) [3](#)

Organization Names are sorted in [relevancy ranked](#) order.

Select Record	Organization Name
1 <input type="checkbox"/>	Office of Drinking Water - Virginia Department of Health (ODW)
2 <input type="checkbox"/>	Drinking Water Program - Department of Environmental Protection - Massachusetts State Government (DWP)
3 <input type="checkbox"/>	National Drinking Water Clearinghouse - National Environmental Service Center - West Virginia University (NDWC)
4 <input type="checkbox"/>	Office of Ground Water and Drinking Water - U.S. Environmental Protection Agency (OGWDW)
5 <input type="checkbox"/>	Drinking Water Program - Division of Drinking Water and Environmental Management - California Department of Health Services - California State Government (DWP)
6 <input type="checkbox"/>	Division of Water Supply Protection - Massachusetts Department of Conservation and Recreation
7 <input type="checkbox"/>	Water Supply and Water Resources Division - National Risk Management Research Laboratory - U.S. Environmental Protection Agency (WSWR)
8 <input type="checkbox"/>	Office of Drinking Water Quality - Rhode Island Department of Health - State of Rhode Island
9 <input type="checkbox"/>	Office of Water Quality - Indiana Department of Environmental Management - Indiana State Government (OWQ)

[Save Checked Items](#)[Sort](#)[Details](#)[History](#)[Download](#)[Modify Search](#)[New Search](#)[Browse Index](#)[SIS Home](#)[MEDLINEplus Home](#)



Poisoning, Toxicology, Environmental Health Topics

- [Air Pollution](#)
- [Anthrax](#)
- [Arsenic](#)
- [Asbestos](#)
- Asbestosis see [Asbestos](#)
- [Biodefense and Bioterrorism](#)
- Biological Weapons see [Biodefense and Bioterrorism](#)
- Bioterrorism see [Biodefense and Bioterrorism](#)
- Campylobacter see [Food Contamination and Poisoning](#)
- [Carbon Monoxide Poisoning](#)
- Cell Phones see [Electromagnetic Fields](#)
- [Chemical Weapons](#)
- Cleaning Products see [Household Products](#)
- [Drinking Water](#)
- EMF see [Electromagnetic Fields](#)
- [Electromagnetic Fields](#)
- [Environmental Health](#)

[Home](#)[Search](#)[Listings](#)[Resources](#)[Help](#)[What's New](#)[About](#)

[Browse](#) : [By Condition](#) : [By Disease Heading](#) : **Injuries, Poisonings, and Occupational Diseases**

☐ **Include trials that are no longer recruiting patients.**

1. [Abdominal Injuries](#) (1 recruiting study)
2. [Abnormalities, Radiation-Induced](#) (1 recruiting study)
3. [Alcohol-Induced Disorders](#) (6 recruiting studies)
4. [Alcohol-Related Disorders](#) (70 recruiting studies)
5. [Alcoholic Intoxication](#) (2 recruiting studies)
6. [Alcoholism](#) (65 recruiting studies)
7. [Amphetamine-Related Disorders](#) (5 recruiting studies)
8. [Amputation, Traumatic](#) (2 recruiting studies)
9. [Ankle Injuries](#) (1 recruiting study)
10. [Arachnidism](#) (1 recruiting study)
11. [Arm Injuries](#) (10 recruiting studies)
12. [Asphyxia](#) (4 recruiting studies)
13. [Athletic Injuries](#) (2 recruiting studies)
14. [Back Injuries](#) (3 recruiting studies)
15. [Berylliosis](#) (1 recruiting study)



Gateway

Your Entrance to the
Knowledge Resources of the
National Library of Medicine

[Search](#)[Clear](#)[Help](#)[FAQ](#)[What's New](#)[About](#)[Term Finder](#)[Limits/Settings](#)[Search Details](#)[History](#)[Locker](#)[Contact Us](#)

Results Summary: **3595** records found

[\[Bookmark this Search \]](#)

Bibliographic Resources [i](#)

2687 **MEDLINE/PubMed** - journal citations, abstracts

17 **NLM Catalog** - books, AVs, serials

232 **TOXLINE Special** - toxicology citations

16 **DART** - Developmental and Reproductive Toxicology

2 **Meeting Abstracts**

Consumer Health Resources [i](#)

70 **MedlinePlus** - Health Topics

4 **MedlinePlus** - Drug Information

152 **MedlinePlus** - Medical Encyclopedia

4 **MedlinePlus** - Current Health News

2 **MedlinePlus** - Other Resources

3 **ClinicalTrials.gov**

3 **DIRLINE** - Directory of Health Organizations

0 **Genetics Home Reference**

Other Information Resources [i](#)

9 **HSRProj** - Health Services Research Projects

1 **OMIM** - Online Mendelian Inheritance in Man

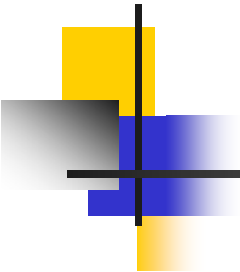
392 **HSDB** - Hazardous Substances Data Bank

1 **IRIS** - Integrated Risk Information System

0 **ITER** - International Toxicity Estimates for Risk

0 **GENE-TOX** - Genetic Toxicology (Mutagenicity)

0 **CCRIS** - Chemical Carcinogenesis Research Information System



Part II

ChemIDplus



ChemIDplus

- Chemical Identification File
- Chemical Dictionary/Directory File for chemicals cited in MEDLARS Files & outside resources
- Contains over 379,000 chemical records
- Structural Data for over 263,000 records
- Direct Link/Searches of MEDLINE, TOXNET, and other resources



ChemIDplus

The ChemIDplus file is a database with two different applications:

- ChemIDplus Lite at:
<http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ChemIDplus Advanced at:
<http://chem.sis.nlm.nih.gov/chemidplus/>



ChemIDplus Lite vs. Advanced


Lite

- Basic searching on chemical name/synonym or registry number
- One input box for search term
- Right truncation (“starts with”) is available by using (*) at the end of a search term
- View chemical structure as a GIF image without a plug-in or special display software
- Spell checker

Advanced

- Advanced searching on chemical name/synonym, registry number, molecular formula, classification code, locator code, toxicity, chemical property, structure, or molecular weight
- Qualify search term with “equals”, “starts with”, or “contains”
- Six areas of input with drop down boxes in each area
- View and draw structures using a plug-in or special display software
- Spell checker

Lite vs. Advanced Main Query Page



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ChemIDplus Lite

[Tox. & Env. Health](#) [TOXNET](#) [Lite](#)

Databases

Search ChemIDplus

Other NLM Resources

HSDB [i](#)

IRIS [i](#)

ITER [i](#)

GENE-TOX [i](#)

CCRS [i](#)

Multi-Databases [i](#)

TOXLINE [i](#)

DART/ETIC [i](#)

TRI [i](#)

Chemical Synonyms, Structures and more [i](#)

TOXNET Home

aspirin

Search **Clear**

Enter the name (e.g. formaldehyde) or registry number (e.g. 50-00-0) to search

Advanced ChemIDplus Search

Provides chemical structure, property, and toxicity searching.

[Tox/Env. Health Home Page](#)

[Haz-Map](#)

[Tox Town](#)

[Household Products Database](#)

[ALTBIB](#)

[MEDLINEplus Tox/Env. Health](#)

[MEDLINE/PubMed](#)

[DIRUNE](#)


[NLM Gateway](#)

Support Pages

[Help](#)

[Fact Sheet](#)

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ChemIDplus Advanced

[Tox. & Env. Health](#) [TOXNET](#) [Lite](#) [Advanced](#)

Search **Clear** **History** **Help**

Display **5** results

Substance Identification [i](#)

Name/Synonym **Equals**

Data is available for 379,776 records.

Toxicity [i](#)

Test: (any) between (mg/kg or ppm)

Species: (any)

Route: (any)

Effect: (any)

Toxicity data is available for 139,354 records.

Physical Properties [i](#)

Melting Point between

Either Measurement Type

Physical property data was provided by [Syracuse Research Corporation](#) and is available for 25,661 records.

Locator Codes [i](#)

(any) AND (any)

Structure [i](#)

View **Help**

Powered by [ChemAxon Marvin](#)

Structure Search Options

☐ Substructure Search

☒ Similarity Search **80** %

☐ Exact (parent only)

☐ Flex (parent, salts, mixture) **NEW**

☐ Flexplus (parent, all variations) **NEW**

Display structures using [i](#)

☒ Marvin ☐ Chime **Change**

Structure data is available for 263,075 records.

Molecular Weight [i](#)

between

Molecular weight data is available for 263,075 records.

Search **Clear** **History** **Help**

Display **5** results



Lite vs. Advanced Results Page

Two Major Differences

- Basic Information and Search Navigation buttons differ in the two applications.
- If multiple results are retrieved, structure search buttons on the right side of the page allow users to transfer, find similar, or enlarge structures in the Advanced version. This feature is not available in ChemIDplus Lite.

Lite vs. Advanced Results Page

ChemIDplus Lite Record

ASPIRIN Search Clear

**Aspirin [BAN:JAN]
RN: 50-78-2**

For more information about this substance, you may select from the the links below.

Basic Information

- Full Record
- Names & Synonyms
- Formulas
- Classification Codes
- Registry Numbers
- Notes
- Toxicity
- Physical Properties

Search Navigation

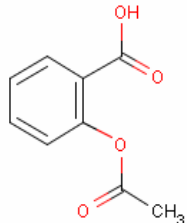
- Main Query Page
- Advanced ChemIDplus Search

File Locator

- [AIDSLINE](#) ⓘ AIDS citations from MEDLINE
- [CANCERLIT](#) ⓘ CANCER LITerature from Medline
- [CCRIS](#) ⓘ NCI Chem Carcinogenesis Res Info System
- [ClinicalTrials.gov](#) ⓘ NIH ClinicalTrials.gov
- [DART/ETIC](#) ⓘ Developmental and Reproductive Toxicology
- [DSL](#) ⓘ Domestic Substances List of Canada
- [EINECS](#) ⓘ EU Inv of Existing Commercial Chem Sub
- [EMIC](#) ⓘ Environmental Mutagen Information Center
- [GENETOX](#) ⓘ EPA GENetic TOXicology
- [HSDB](#) ⓘ Hazardous Substances Data Bank
- [Haz-Map](#) ⓘ Occupational exposure to hazardous agents

ChemIDplus Advanced

NAME: Aspirin [BAN:JAN]
RN: 50-78-2



MW: 180.158
[Enlarge Structure](#)

For more information about this substance, you may select from the the links below.

Basic Information

- Full Record
- Structure
- Names & Synonyms
- Formulas
- Classification Codes
- Registry Numbers

Search Navigation

- Start New Query
- Modify Query
- Show Query
- Search History
- Structure Similarity Search
- Transfer Structure

File Locator

- [AIDSLINE](#) ⓘ AIDS citations from MEDLINE
- [CANCERLIT](#) ⓘ CANCER LITerature from Medline
- [CCRIS](#) ⓘ NCI Chem Carcinogenesis Res Info System
- [ClinicalTrials.gov](#) ⓘ NIH ClinicalTrials.gov
- [DART/ETIC](#) ⓘ Developmental and Reproductive Toxicology
- [DSL](#) ⓘ Domestic Substances List of Canada
- [EINECS](#) ⓘ EU Inv of Existing Commercial Chem Sub

Basic Information and Search Navigation buttons differ in the two applications

Lite vs. Advanced Results Page (cont'd)

[MEDLINE](#)
[MEDLINEplus](#)
[MESH](#)
[MESH HEADING](#)
[RTECS](#)

[TOXLINE Core](#)
[TOXLINE Special](#)
[TSCAINV](#)

i Medical literature onLINE
i Consumer health information
i Medical Subject Headings File
i Medical Subject Headings
i Registry of Toxic Effects of Chemical Substances
i NLM TOXLINE Core from MEDLINE
i NLM TOXLINE Special on TOXNET
i EPA Chemical Substances Inventory

Internet Locator

[ChEBI](#)
[EPA CRS](#)
[EPA Envirofacts](#)
[NIAID ChemDB](#)
[NIOSH ICSC](#)

[NIST WebBook](#)
[NJ-HSFS](#)

[NTP DBS](#)
[OSHA Chem](#)
[SRC CHEMFATE](#)

[healthfinder](#)

i Chem Entities of Biological Interest
i EPA Substance Registry System
i EPA Master Chemical Integrator
i NIAID Chemical Database
i NIOSH International Chemical Safety Cards
i NIST Chemistry WebBook
i New Jersey Hazardous Substance Fact Sheets
i NTP Database Search
i OSHA Chemical Sampling Info
i Syracuse Research Corporation CHEMFATE
i DHHS healthfinder

Superlist Locator

[CA65](#)
[DEA](#)
[MA](#)

[PA](#)

[PELS](#)

[REL](#)

[TLV](#)

i California Proposition 65 List
i DEA Controlled Substances
i Massachusetts Right-to-know Substances
i Pennsylvania Right-to-know Substances
i OSHA Toxic and Hazardous Substances, 1989
i NIOSH Recommended Exposure Limits
i ACGIH Threshold Limit Values

Notes

Toxicity

Physical Properties

[EMIC](#)

[GENETOX](#)
[HSDB](#)
[Haz-Map](#)

[MEDLINE](#)
[MEDLINEplus](#)
[MESH](#)
[MESH HEADING](#)
[RTECS](#)

i Environmental Mutagen Information Center
i EPA GENetic TOXicology
i Hazardous Substances Data Bank
i Occupational exposure to hazardous agents
i MEDical literature onLINE
i Consumer health information
i Medical Subject Headings File
i Medical Subject Headings
i Registry of Toxic Effects of Chemical Substances
i NLM TOXLINE Core from MEDLINE
i NLM TOXLINE Special on TOXNET
i EPA Chemical Substances Inventory

[TOXLINE Core](#)
[TOXLINE Special](#)
[TSCAINV](#)

Internet Locator

[ChEBI](#)
[EPA CRS](#)
[EPA Envirofacts](#)
[NIAID ChemDB](#)
[NIOSH ICSC](#)

[NIST WebBook](#)
[NJ-HSFS](#)

[NTP DBS](#)
[OSHA Chem](#)
[SRC CHEMFATE](#)

[healthfinder](#)

i Chem Entities of Biological Interest
i EPA Substance Registry System
i EPA Master Chemical Integrator
i NIAID Chemical Database
i NIOSH International Chemical Safety Cards
i NIST Chemistry WebBook
i New Jersey Hazardous Substance Fact Sheets
i NTP Database Search
i OSHA Chemical Sampling Info
i Syracuse Research Corporation CHEMFATE
i DHHS healthfinder

Basic
ChemDpt
Search

Lite vs. Advanced Full Record Page


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ChemIDplus Full Record

[Tox & Env. Health](#) [TOXNET](#) [Return to Results Page](#)

Aspirin [BAN:JAN]
RN: 50-78-2



Names and Synonyms

MeSH Heading
[1] Aspirin

Name of Substance
[1] Acetylsalicylic acid
[1] Aspirin
[1] Aspirin [BAN:JAN]

Mixture Name
[1] A.S.A. and Codeine Compound
[1] Anacin
[1] Anacin Maximum Strength
[1] Arthritis Pain Formula Maximum Strength
[1] Ascriptin
[1] Asotal
[1] Dapin
[1] Empirin with Codeine

Synonyms
[1] 2-(Acetyloxy)benzoic acid
[1] 2-Acetoxybenzoic acid
[1] 2-Carboxyphenyl acetate
[1] 4-10-00-00138 (Beilstein Handbook Reference)
[1] A.S.A.
[1] A.S.A. empirin
[1] AC 5230
[1] AIB-02956
[1] ASA
[1] Acenterine
[1] Acesal
[1] Aceticyl
[1] Acetilsalilico
[1] Acetillum acidulatum
[1] Acetisal
[1] Acetol
[1] Acetol (VAN)
[1] Acetonyl
[1] Acetophen
[1] Acetosol
[1] Acetosalic acid
[1] Acetosalin
[1] Acetylin
[1] Acetylsal
[1] Acetylsalicylate
[1] Acetylsalicylsure [German]
[1] Acetylsalicylic acid
[1] Acide acetylsalicylique [French]
[1] Acido O-acetil-benzoico [Italian]
[1] Acido acetilsalilico [Italian]

Some mixture names eliminated

Some synonyms eliminated


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[Tox & Env. Health](#) [TOXNET](#) [Return to Results Page](#)

Aspirin [BAN:JAN]
RN: 50-78-2



Names and Synonyms

MeSH Heading
[1] Aspirin

Name of Substance
[1] Acetylsalicylic acid
[1] Aspirin
[1] Aspirin [BAN:JAN]

Mixture Name
[1] A.S.A. and Codeine Compound
[1] Anacin
[1] Anacin Maximum Strength
[1] Arthritis Pain Formula Maximum Strength
[1] Ascriptin
[1] Asotal

Synonyms
[1] 2-(Acetyloxy)benzoic acid
[1] 2-Acetoxybenzoic acid
[1] 2-Carboxyphenyl acetate
[1] 4-10-00-00138 (Beilstein Handbook Reference)
[1] A.S.A.
[1] A.S.A. empirin
[1] AC 5230
[1] AIB-02956
[1] ASA
[1] Acenterine
[1] Acesal
[1] Aceticyl
[1] Acetilsalilico
[1] Acetillum acidulatum
[1] Acetisal
[1] Acetol
[1] Acetol (VAN)
[1] Acetonyl
[1] Acetophen
[1] Acetosol
[1] Acetosalic acid
[1] Acetosalin
[1] Acetylin
[1] Acetylsal
[1] Acetylsalicylate
[1] Acetylsalicylsure [German]
[1] Acetylsalicylic acid
[1] Acide acetylsalicylique [French]
[1] Acido O-acetil-benzoico [Italian]
[1] Acido acetilsalilico [Italian]

Some mixture names eliminated

Some synonyms eliminated

Lite vs. Advanced Full Record Page (cont'd)

	Superlist Name 1 Acetylsalicylic acid 1 Aspirin 1 Benzoic acid, 2-(acetyloxy)- 1 DEA No. 9804 1 Empirin
Registry Numbers	CAS Registry Number 1 50-78-2
	Other Registry Number 1 11126-35-5 1 11126-37-7 1 2349-94-2 1 26914-13-6 1 98201-60-6
	System Generated Number 1 000050782
Classification Codes	Classification Code 1 Analgesic 1 Anti-inflammatory agents, non-steroidal 1 Antipyretic 1 Antirheumatic 1 Cyclooxygenase inhibitors 1 Drug / Therapeutic Agent
	Superlist Classification Code 1 DEA Schedule III 1 TWA 5 mg/m3
Formulas	Molecular Formula 1 C9-H8-O4
Notes	Note 1 The prototypical analgesic used in the treatment of mild to moderate pain. It has anti-inflammatory and antipyretic properties and acts as an inhibitor of cyclooxygenase which results in the inhibition of the biosynthesis of prostaglandins. Aspirin also inhibits platelet aggregation and is used in the prevention of arterial and venous thrombosis. (From Martindale, The Extra Pharmacopoeia, 30th ed, p5)
Locators	File Locator AIDSLINE 1 AIDS citations from MEDLINE CANCERLIT 1 CANCER Literature from Medline CCRIS 1 NCI Chem Carcinogenesis Res Info System ClinicalTrials.gov 1 NIH ClinicalTrials.gov DART/ETIC 1 Developmental and Reproductive Toxicology DSL 1 Domestic Substances List of Canada EINECS 1 EU Inv of Existing Commercial Chem Sub FMIC: 1 Environmental Mutagen Information Center

	Superlist Name 1 Acetylsalicylic acid 1 Aspirin 1 Benzoic acid, 2-(acetyloxy)- 1 DEA No. 9804 1 Empirin
Registry Numbers	CAS Registry Number 1 50-78-2
	Other Registry Number 1 11126-35-5 1 11126-37-7 1 2349-94-2 1 26914-13-6 1 98201-60-6
	System Generated Number 1 000050782
Classification Codes	Classification Code 1 Analgesic 1 Anti-inflammatory agents, non-steroidal 1 Antipyretic 1 Antirheumatic 1 Cyclooxygenase inhibitors 1 Drug / Therapeutic Agent
	Superlist Classification Code 1 DEA Schedule III 1 TWA 5 mg/m3
Formulas	Molecular Formula 1 C9-H8-O4
Notes	Note 1 The prototypical analgesic used in the treatment of mild to moderate pain. It has anti-inflammatory and antipyretic properties and acts as an inhibitor of cyclooxygenase which results in the inhibition of the biosynthesis of prostaglandins. Aspirin also inhibits platelet aggregation and is used in the prevention of arterial and venous thrombosis. (From Martindale, The Extra Pharmacopoeia, 30th ed, p5)
Locators	File Locator AIDSLINE 1 AIDS citations from MEDLINE CANCERLIT 1 CANCER Literature from Medline CCRIS 1 NCI Chem Carcinogenesis Res Info System ClinicalTrials.gov 1 NIH ClinicalTrials.gov DART/ETIC 1 Developmental and Reproductive Toxicology DSL 1 Domestic Substances List of Canada EINECS 1 EU Inv of Existing Commercial Chem Sub FMIC: 1 Environmental Mutagen Information Center

Toxicity Data is searchable in Advanced only

Toxicity

Organism	Test Type	Route	Reported Dose (Normalized Dose)	Effect	Source
child	LDLo	oral	104mg/kg (104 mg/kg)	LUNGS, THORAX, OR RESPIRATION: ACUTE PULMONARY EDEMA GASTROINTESTINAL: NAUSEA OR VOMITING BLOOD: HEMORRHAGE	Clinical Toxicology. Vol. 18, Pg. 247, 1981.

Physical Properties

Physical Property	Value	Units	Temp (deg C)	Source
Melting Point	135	deg C		EXP
pKa Dissociation Constant	3.49	(none)	25	EXP
log P (octanol-water)	1.19	(none)		EXP
Water Solubility	4600	mg/L	25	EXP
Vapor Pressure	2.52E-05	mm Hg	25	EXP
Henry's Law Constant	1.30E-09	atm-m3/mole	25	EST
Atmospheric OH Rate Constant	8.10E-13	cm3/molecule-sec	25	EST

Physical property data is provided to ChemIDplus by [Syracuse Research Corporation](#).
See [all available property data for this compound](#), including references.

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[National Institutes of Health](#), [Department of Health & Human Services](#)
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Customer Service: tehip@nlm.nih.gov
Last modified on September 9, 2004.

Toxicity and Physical Property data is displayed only in the ChemIDplus Lite version. These values are searchable over ranges, by route, and species in the ChemIDplus Advanced version.



ChemIDplus Content

Names and Synonyms

- **Name of Substance**: Usually the most commonly used name, includes MeSH heading and USAN name
- **MeSH Heading**: NLM Medical Subject Heading
- **Systematic Name**: Describes molecular structure
- **Synonyms**: All other names found for the substance
- **Mixture Name**: Name of multi-component substance, one of which is the retrieved substance
- **SUPERLIST Name**: The name used by regulatory/guidance lists



ChemIDplus Content

- **Formulas**: The molecular formula in a hyphenated format.
- **Classification Codes**: Describe the general category assigned by a given source to a chemical based on toxicity, use and application, pharmacologic and/or therapeutic category, and status on certain chemical lists.
- **Notes**: A textual description of a compound's use and utility, often from MeSH controlled vocabulary.
- **Locators**: The names of NLM databases, and other major resources that have information about a given compound, usually hyperlinked.



ChemIDplus Content

- **CAS Registry Number**: Unique number of up to 9 digits assigned by Chemical Abstracts Service used to index chemicals. ChemIDplus uses the hyphenated format
- **ID**: The ID number is the CAS Registry Number in a non-hyphenated fixed length format or a unique number for entries that have no CAS Registry or NLM assigned numbers
- **Molecular Structure**: Display of structure (if present) via Chime or Marvin
- **Registry Numbers**: All CAS Registry Numbers known to be assigned over time to a specific compound



ChemIDplus Content

- **Toxicity** Values that indicate whether the dose caused death (LD) or other toxic non-lethal effect (TD) or whether it was administered as a lethal concentration (LC) or toxic concentration in the inhaled air (TC)
- **Chemical Properties** Values for melting point, boiling point, water solubility, octanol/water partition coefficient, vapor pressure, acid dissociation constant, Henry's law, and OH radical reaction rate constant
- **Molecular Weight** The mass of a molecule

*Refer to the Advanced Help Section for more detailed definitions



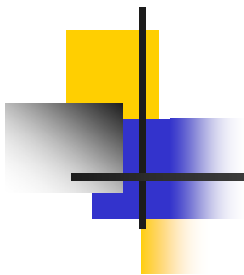
ChemIDplus Exercises

Using ChemIDplus Lite: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

1. Check the file locator to see what NLM databases contain information on phenytoin. Search DART without leaving ChemIDplus.
Type Phenytoin in search box, click Search. Click DART/ETIC in the middle blue box under File Locator, view record in slave window.
2. Locate the record for styrene and link to the Internet Locator ATSDR TOXFAQS. Next link to the NIOSH Pocket Guide. Is styrene on the EPA Clean Air Act (CAA1)? Activate the Classification Code button and find the IARC classification on carcinogenicity, click on the "i" to see the source.
Type styrene in the search box, click Search. Scroll down the middle blue box and under Internet Locators click the link to ATSDR TOXFAQS. Close the slave window and click NIOSH Pocket Guide also under Internet Locators. Next, scroll down and under Superlist Locator click the link to the CAA1 listing for styrene. Under Basic Information on the left, click the button for Classification Code. Under Superlist Classification Code, click the "i" for Overall Carcinogenic Evaluation..... to view this data source in the slave window.

Using ChemIDplus Advanced: <http://chem.sis.nlm.nih.gov/chemidplus/>

1. Find the "valium" record in ChemIDplus and use its structure to do substructure and similarity searches respectively. How many structures are in each category?
Type valium in the substance identification input box, click Search. Now click the Transfer Structure button in the left column. In the Structure input box, be sure the default substructure search is selected. Click search. View the result count. Now click the modify query button. In the Structure input box, select similarity search and type in 90 in the percentage pull-down box (the default is 80%). Click search. View the result count. This result give structures that are 90% similar or greater. If no results are retrieved, then a lower percentage must be used.
2. Identify all the HSDB records that are ozone depleters (CAA2).
In the Locator Code input box select HSDB from the first pull-down list. Type HSDB in the search box. Be sure the default "and" is selected in the second pull-down list. In the third pull-down list choose CAA2. Click Search.
3. Identify all compounds that have an orally administered LD50 less than 50mg/kg (less than 50mg/kg is considered extremely toxic by EPA guidelines-See Help Section under Toxicity).
In the Toxicity input box next to Test, select LD50 and less than from the pull-down boxes. Then, type 50 in the empty input box below Test. Next to Route, select oral from the pull-down box. Click search.
4. Find the logP value for the chemical DDT in the Physical Properties table. Use the Help Section to verify that this substance is stored in the fatty tissues of animals based on the logP value in the table.
Type DDT in the substance identification input box and click search. Click on the Physical Properties button under Basic Information. Note the logP value in the table in the slave window. Close the window. Click the Start New Query button to return to the main query page. Click the Help button. Click on the link to Chemical Properties. Scroll down and read the example given for logP values.



Part III

TOXNET Overview, HSDB, & Related Files



What is TOXNET?

- A free web-based system of databases on toxicology, environmental health, hazardous chemicals, toxic releases, chemical nomenclature, and specialty areas such as occupational health and consumer products
- A product of NLM's Toxicology and Environmental Health Information Program
- Toxicology Data (one record per chemical)– HSDB, IRIS, CCRIS, GENE-TOX, ITER (can also search any combination of these files with “Multi-Databases” interface)
- Toxicology Literature (bibliographic references) – TOXLINE, DART/ETIC
- Toxic Releases (of chemicals to the environment) – TRI
- User Support – tehip@teh.nlm.nih.gov or click on “Contact TOXNET”

Where is TOXNET?

toxnet.nlm.nih.gov



Toxicology Data Files - Content

Hazardous Substances Data Bank (HSDB) – from NLM

About 5000 Chemical Records

Human Health Effects

Emergency Medical Treatment

Animal Toxicity Studies

Metabolism/Pharmacokinetics

Pharmacology

Environmental Fate/Exposure

Environmental Standards & Regulations

Chemical/Physical Properties

Chemical Safety & Handling

Occupational Exposure Standards

Manufacturing and Use

Laboratory Methods

Special References

Synonyms and Identifiers



More about HSDB

- Factual Data Bank/Online Handbook
- Peer-Reviewed – Scientific Review Panel
- Review Status Tags – Peer Reviewed, QC Reviewed, Unreviewed
- Fully Referenced
- Data – Excerpted from books, government documents, technical reports, selected primary literature, databases. Some data compiled expressly for HSDB.



Toxicology Data Files - Content

Chemical Carcinogenesis Research Information System (CCRIS) –

from the National Cancer Institute (NCI)

About 9000 Chemical Records

Carcinogenicity Studies

Tumor Inhibition Studies

Tumor Promotion Studies

Mutagenicity Studies

e.g. Carcinogenicity Studies Data Structure – species, route, tumor site/type of lesion, results, reference



Toxicology Data Files - Content

GENE-TOX

from the U.S. Environmental Protection Agency (EPA)

3214 Chemical Records

Note: GENE-TOX not updated since January 2000

Mutagenicity Studies

Data Structure – assay type, assay code, results, panel report, reference



Toxicology Data Files - Content

Integrated Risk Information System (IRIS) from the U.S. Environmental Protection Agency (EPA)

About 550 Chemical Records

Noncarcinogenic Assess. – Oral (RfD)
Noncarcinogenic Assess. – Inhal. (RfC)

Carcinogenic Assess. – Oral
Carcinogenic Assess. – Inhal.

- Contains EPA consensus scientific positions and quantitative values on cancer and non-cancer health effects that may result from lifetime oral or inhalation exposure to specific chemical substances in the environment
- Risk Assessment – Identification and quantification of risk. Function of toxicity and exposure
- Risk Assessment Process (National Academy of Sciences, 1983) – 1. Hazard identification, 2. Dose-Response assessment [IRIS], 3. Exposure assessment, 4. Risk Characterization



Toxicology Data Files - Content

International Toxicity Estimates for Risk Assessment (ITER)

from Toxicology Excellence for Risk Assessment (TERA)

A Non-profit Corporation

About 650 Chemical Records

Tabular and Comparative Risk Data for Cancer Oral, Non-Cancer Oral, Cancer Inhalation, Non-Cancer Inhalation Effects from:

Agency for Toxic Substances and Disease Registry, U.S. (ATSDR)

Environmental Protection Agency, U.S. (EPA)

Health Canada

International Agency for Research on Cancer (IARC)

NSF International (National Sanitation Foundation)

National Institute of Public Health and the Environment, Dutch (RIVM)

Independently-derived Values

Includes synopses, links to organization source documents



United States
National Library
of Medicine

TOXNET

Toxicology Data Network



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TOXNET - Databases on toxicology, hazardous chemicals, environmental health, and toxic releases.

Select Database

- [ChemIDplus](#) [?](#)
- [HSDB](#) [?](#)
- [TOXLINE](#) [?](#)
- [CCRIS](#) [?](#)
- [DART](#) [?](#)
- [GENETOX](#) [?](#)
- [IRIS](#) [?](#)
- [ITER](#) [?](#)
- [Multi-Database](#) [?](#)
- [TRI](#) [?](#)
- [Haz-Map](#) [?](#)
- [Household Products](#) [?](#)
- [TOXMAP](#) [?](#)

Search All Databases

Enter term(s) to search all databases.

[Search](#)

[Clear](#)

[Help](#)

TOXNET Search Options

- Search all databases: Enter term(s) in box above
- Search a specific database: Click database at left
- Database description: Click on the [?](#)

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health and
toxicology
resources.

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Support Pages

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- ▶ [TOXNET FAQ](#)
- ▶ [TOXNET Update Status](#)
- ▶ [Fact Sheet](#)
- ▶ [Database Description](#)
- ▶ [Training Manuals](#)
- ▶ [News](#)



Hazardous Substances Data Bank (HSDB) - Comprehensive, peer-reviewed toxicology data for about 5,000 chemicals.

Select Database

- [ChemIDplus](#) [?](#)
- **[HSDB](#)** [?](#)
- [TOXLINE](#) [?](#)
- [CCRIS](#) [?](#)
- [DART](#) [?](#)
- [GENETOX](#) [?](#)
- [IRIS](#) [?](#)
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- [Multi-Database](#) [?](#)
- [TRI](#) [?](#)
- [Haz-Map](#) [?](#)
- [Household Products](#) [?](#)
- [TOXMAP](#) [?](#)
- [TOXNET Home](#) [?](#)

Search HSDB

acrylamide

(e.g. antifreeze kidney failure,
chromium compounds, 7718-54-9)

[Search](#)

[Clear](#)

[Help](#)

For chemicals, add synonyms
and CAS numbers to search:

☒ Yes ☐ No

[Limits](#)

[Browse the Index](#)

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Support Pages

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- ▶ [Sample Record](#)
- ▶ [HSDB Scientific Review Panel](#)
- ▶ [TOXNET FAQ](#)

Chemical names, ID numbers, or other
attributes can be searched, singly or in
combination.



TOXNET - Databases on toxicology, hazardous chemicals, environmental health, and toxic releases.

Select Database

- [ChemIDplus](#) [?](#)
- [HSDB](#) [?](#)
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- [CCRIS](#) [?](#)
- [DART](#) [?](#)
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- [TRI](#) [?](#)
- [Haz-Map](#) [?](#)
- [Household Products](#) [?](#)
- [TOXMAP](#) [?](#)

To search all or a combination of HSDB, CCRIS, GENETOX, IRIS, ITER

Search All Databases

Enter term(s) to search all databases.

Search Results:

Database	Records found ?
TOXLINE Special	709
DART Special	70
HSDB	37
IRIS	1
ITER	2
GENETOX	2
CCRIS	8
TRI	83
CHEMIDplus	1

Record counts may vary somewhat when databases are searched individually.

Other Related NLM Resources

- Household Products [Show me](#)
- Haz-Map [Show me](#)
- TOXMAP [Map It](#)

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HSDB Search Results

▶ [Env. Health & Toxicology](#) ▶ [TOXNET](#) ▶ [HSDB](#)

For chemicals, add synonyms and CAS numbers to search: ☒ Yes ☐ No

Items **1** through **20** of **37**

Pages: **1** 2 ▶

Substance Names are sorted in [relevancy ranked](#) order.

Select Record	Substance Name
---------------	----------------

More relevant records display nearer the top of the list.

The following is the primary record for the chemical. All of the query terms were found.

1	<input type="checkbox"/>	ACRYLAMIDE 79-06-1
---	--------------------------	---------------------------------------

The following 36 records contain one or more of the requested chemical name(s) and all of the query terms anywhere in the record.

2	<input type="checkbox"/>	N-(HYDROXYMETHYL)ACRYLAMIDE 924-42-5
---	--------------------------	---

3	<input type="checkbox"/>	POLYACRYLAMIDE 9003-05-8
---	--------------------------	---

4	<input type="checkbox"/>	ACRYLONITRILE 107-13-1
---	--------------------------	---

5	<input type="checkbox"/>	STYRENE-7,8-OXIDE 96-09-3
---	--------------------------	--

6	<input type="checkbox"/>	DIACETONE ACRYLAMIDE 2873-97-4
---	--------------------------	---

7	<input type="checkbox"/>	FURYL FURAMIDE 3688-53-7
---	--------------------------	---

8	<input type="checkbox"/>	VINYL SULFONE 77-77-0
---	--------------------------	--

9	<input type="checkbox"/>	N-ISOPROPYLACRYLAMIDE 2210-25-5
---	--------------------------	--

10	<input type="checkbox"/>	TRIPHENYL TIN HYDROXIDE 76-87-9
----	--------------------------	--

Note other chemical records in which name acrylamide is mentioned.

Contents

Contract all categories ☐Expand all categories ☐

Select

Clear

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- ☐  [Emergency Medical Treatment](#)
- ☐  [Animal Toxicity Studies](#)
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- ☐  [Environmental Standards & Regulations](#)
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- ☐  [Chemical Safety & Handling](#)
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- ☐  [Manufacturing/Use Information](#)
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- ☐  [Synonyms and Identifiers](#)
- ☐  [Administrative Information](#)

ACRYLAMIDE

CASRN: 79-06-1

*For other data, click on the Table of Contents***Human Health Effects:**

Human Health Effects is default display only for HSDB.

Toxicity Summary:

Search term(s) highlighted in red.

IDENTIFICATION: **Acrylamide** is a white crystalline solid produced from acrylonitrile, which is present as a residue in technical grades of **acrylamide**. **Acrylamide** is mainly used in the production of polymers and copolymers for various purposes. All **acrylamide** in the environment is man-made, the main source being the release of the monomer residues from polyacrylamide used in water treatment or in industry. HUMAN EXPOSURE: **Acrylamide** is readily absorbed by ingestion, inhalation, and through the skin. **Acrylamide** is toxic and an irritant. Cases of **acrylamide** poisoning show signs and symptoms of local effects due to irritation of the skin and mucous membranes and systemic effects due to the involvement of the central, peripheral, and autonomic nervous systems. Local irritation of the skin or mucous membranes is characterized by blistering and desquamation of the skin of the hands (palms) and feet (soles) combined with blueness of the hand and feet. Effects on the central nervous system are characterized by abnormal fatigue, sleepiness, memory difficulties, and dizziness. With severe poisoning, confusion, disorientation, and hallucinations occur. Truncal ataxia is a characteristic feature, sometimes combined with nystagmus and slurred speech. Excessive sweating in the limb extremities is a common observation. Sign of central nervous system and local skin involvement may precede peripheral neuropathy by as much as several weeks. Peripheral neuropathy can involve loss of tendon reflexes, impairment of vibration sense, loss of other sensation, and muscular wasting in peripheral parts of the extremities. Nerve biopsy shows loss of large diameter nerve fibers as well as regenerating fibers. Autonomic nervous system involvement is indicated by excessive sweating, peripheral vasodilation, and difficulties in micturition and defecation. After cessation of exposure to **acrylamide**, most cases recover, although the course of improvement is prolonged and can extend over months to years. No epidemiological data on cancer due to exposure to **acrylamide** are available and, from the available data, it is not possible to form a conclusion concerning the carcinogenicity of **acrylamide**. There is no evidence in man of any teratogenic effects resulting from **acrylamide** exposure. ANIMAL STUDIES: In rats, biotransformation of **acrylamide** occurs through glutathione conjugation and through decarboxylation. At least 4 urinary metabolites have been found in rat urine, of which mercapturic acid and cysteine-S-propionamide have been identified. **Acrylamide** and its metabolites are accumulated (protein-bound) in both nervous system tissue and blood (bound to hemoglobin). Accumulation in the liver and kidney as well as the male reproductive system has also been demonstrated. The results of animal studies indicate that **acrylamide** is largely excreted as metabolites in urine and bile. Because of the enterohepatic circulation of biliary metabolites, fecal excretion

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[Department of Health & Human Services](#)
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Customer Service: tehip@tehl.nlm.nih.gov

Click here to view environmental
fate information.

Contents

Contract all categories ☐Expand all categories ☐

Select

Clear

ACRYLAMIDE

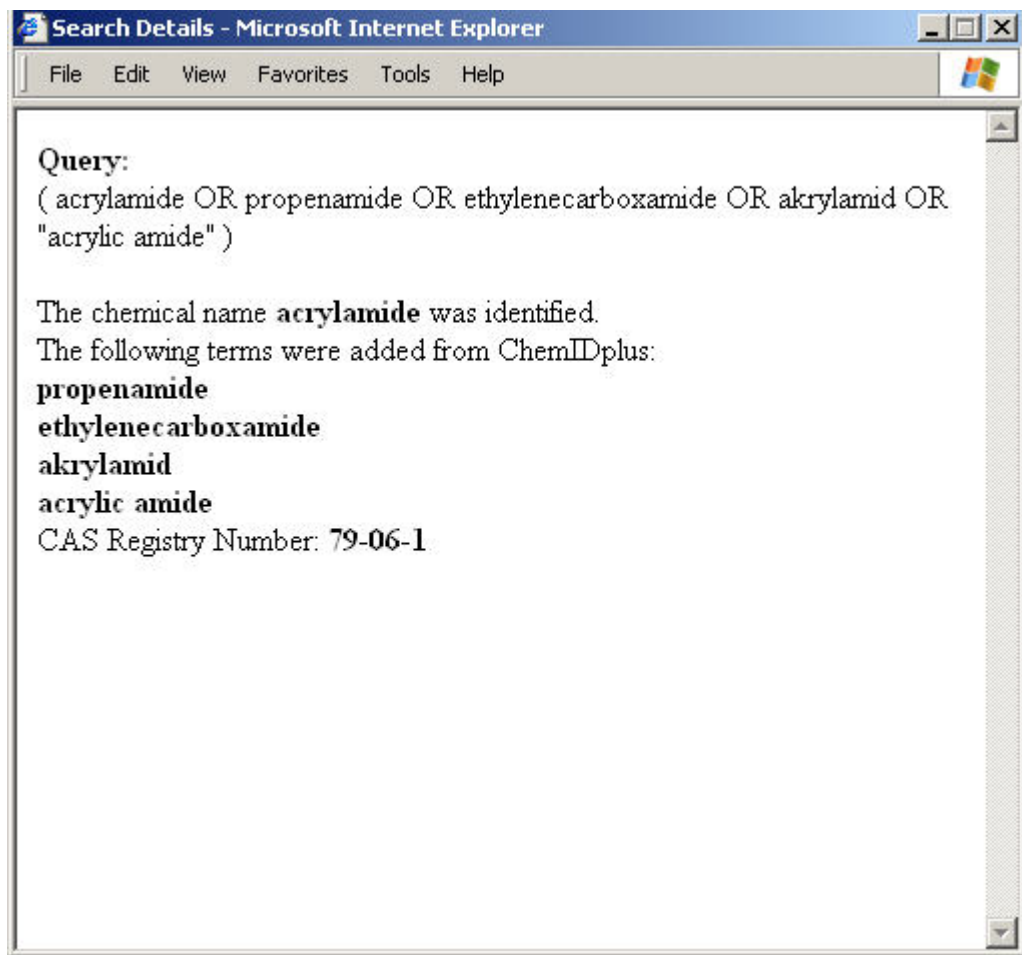
CASRN: 79-06-1

For other data, click on the Table of Contents

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Environmental Fate & Exposure:**Environmental Fate/Exposure Summary:**

Acrylamide's production and use in the production of polyacrylamide and amide monomers may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 0.007 mm Hg at 25 deg C indicates **acrylamide** will exist solely as a vapor in the ambient atmosphere. Vapor-phase **acrylamide** will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 1.4 days. The half-life for the reaction of vapor-phase **acrylamide** with ozone is estimated to be 6.5 days. **Acrylamide** is not expected to be susceptible to direct photolysis in sunlight since it does not absorb light with wavelengths >290 nm. If released to soil, **acrylamide** is expected to have very high mobility based upon an estimated Koc of 10. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.8×10^{-9} atm-cu m/mole. Volatilization from dry soil surfaces is not expected based on **acrylamide**'s vapor pressure. The nitrogen in **acrylamide** was recovered as inorganic nitrogen with recoveries after 3 and 14 days at 30 deg C ranging from 11-71% in Clarion soil and 74-95% in Canisteo soil, respectively. Results from these studies suggested that **acrylamide** is hydrolyzed in soil under aerobic conditions to produce ammonium ion, which is then oxidized to nitrite ion and nitrate ion. If released into water, **acrylamide** is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. In a river die-away test, 90% of **acrylamide** disappeared in approximately 150 hours. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's Henry's Law constant. A BCF of 1 for fingerling trout, suggests the potential for bioconcentration in aquatic organisms is low. The hydrolysis half-life of **acrylamide** has been reported as >38 yrs. Occupational exposure to **acrylamide** may occur through inhalation and dermal contact with this compound at workplaces where **acrylamide** is produced or used such as its use in soil stabilization. Monitoring data indicate that the general population may be exposed to **acrylamide** via ingestion of food and drinking water and via dermal contact with polyacrylamide products, which may contain **acrylamide**. **Acrylamide** has been found in certain foods that have been cooked and processed at high temperatures. In foods that have been analyzed, the highest average levels of **acrylamide** were found in potato crisps and chips; however, levels varied widely from not detected to 3.5 mg/kg of product. Average daily intakes of **acrylamide** for the general



“Details” for
acrylamide search



Hazardous Substances Data Bank (HSDB) - Comprehensive, peer-reviewed toxicology data for about 5,000 chemicals.

LIMITS Search

Select Database

- [ChemIDplus](#) [?](#)
- **[HSDB](#)** [?](#)
- [TOXLINE](#) [?](#)
- [CCRIS](#) [?](#)
- [DART](#) [?](#)
- [GENETOX](#) [?](#)
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- [Multi-Database](#) [?](#)
- [TRI](#) [?](#)
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Search HSDB

[Search](#)

[Clear](#)

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Add chemical synonyms and CAS numbers to search: ☒ Yes ☐ No

Search: ☐ exact words ☒ singular & plural forms ☐ word variants

Search records with: ☐ the phrase ☒ all words ☐ any words

Search in fields:

(If no box is checked, all fields will be searched.)

[Contract all categories](#)

[Expand all categories](#)

- ☐ [Substance Identification](#)
- ☒ [Human Health Effects](#)
- ☐ [Emergency Medical Treatment](#)
- ☐ [Animal Toxicity Studies](#)
- ☐ [Metabolism/Pharmacokinetics](#)
- ☐ [Pharmacology](#)
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- ☐ [Environmental Standards & Regulations](#)
- ☐ [Chemical/Physical Properties](#)
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- ☐ ☒ [Pharmacology](#)
- ☐ ☒ [Environmental Fate & Exposure](#)
 - ☐ [Environmental Fate/Exposure Summary](#)
 - ☐ [Probable Routes of Human Exposure](#)
 - ☐ [Average Daily Intake](#)
 - ☐ [Natural Pollution Sources](#)
 - ☐ [Artificial Pollution Sources](#)
 - ☐ [Environmental Fate](#)
 - ☐ [Environmental Biodegradation](#)
 - ☐ [Environmental Abiotic Degradation](#)

ACRYLAMIDE

CASRN: 79-06-1

For other data, click on the Table of Contents

Best Sections

Most relevant first.

Food Survey Values :

Acrylamide levels were measured in foods in the 2003 FDA Total Diet Survey, which represents 286 ready-to-eat foods in the US food supply(1). **Acrylamide** was generally not detected (detection limit 10 ppb) or detected infrequently in dairy, eggs, fats/oils, beverages, fruits, vegetables, legumes, mixtures (casseroles, sandwiches, soups, and pizzas), and meat/poultry/fish(1). Snack foods (corn/tortilla **chips**, microwave popcorn, **potato chips**, pretzels) contained some of the highest levels of **acrylamide**, ranging from 46 to 536 ppb(1). **Acrylamide** was also detected relatively frequently in the grains/starches/baked good category, with the highest levels found in graham crackers (211-647 ppb) and butter-type crackers (348-425 ppb)(1). **Acrylamide** was detected relatively infrequently in baby food products, with the highest levels found in arrowroot cookies (105-267 ppb), sweet potatoes (30-117 ppb), and teething biscuits (128-235 ppb)(1).

[(1) US Food and Drug Administration; Exploratory Data on Acrylamide in Food FY 2003 Total Diet Study Results. March 2004. Available at:
<http://www.cfsan.fda.gov/~dms/acrydat2.html> as of April 7, 2004.]**PEER
REVIEWED**

Hot-Linked Document

Food Survey Values :

Mean (ug/kg) **acrylamide** concentrations in various foods and food product groups from Norway, Sweden, Switzerland, the UK, and the US have been reported as: **potato** crisps/sweet **potato**: 1,312 (range 170-2,287, for n=38 samples); **potato chips**: 537 (<50-3,500, n=39); batter baked products: 36 (<30-42, n=2); bakery products: 112 (<50-450, n=19); biscuits, crackers, toast, bread crisps: 423 (<30-3,200, n=58); breakfast cereals: 298 (<30-1,346, n=29), corn crisps: 218 (34-416, n=7); soft bread: 50 (<30-

Click to see acrylamide
records in other databases.

Contents

Contract all categories

Expand all categories

Select

Clear

- ☐ [FULL RECORD](#)
- ☐ [BEST SECTIONS](#)
- ☒ [Human Health Effects](#)
 - ☐ [Toxicity Summary](#)
 - ☐ [Evidence for Carcinogenicity](#)
 - ☐ [Human Toxicity Excerpts](#)
 - ☐ [Skin, Eye and Respiratory Irritations](#)
 - ☐ [Medical Surveillance](#)
 - ☐ [Populations at Special Risk](#)
 - ☐ [Probable Routes of Human Exposure](#)
 - ☐ [Average Daily Intake](#)
- ☐ [Emergency Medical Treatment](#)
- ☐ [Animal Toxicity Studies](#)
- ☐ [Metabolism/Pharmacokinetics](#)
- ☐ [Pharmacology](#)
- ☒ [Environmental Fate & Exposure](#)
 - ☐ [Environmental Fate/Exposure Summary](#)
 - ☐ [Probable Routes of Human Exposure](#)
 - ☐ [Average Daily Intake](#)
 - ☐ [Natural Pollution Sources](#)
 - ☐ [Artificial Pollution Sources](#)
 - ☐ [Environmental Fate](#)
 - ☐ [Environmental Biodegradation](#)
 - ☐ [Environmental Abiotic Degradation](#)

ACRYLAMIDE

CASRN: 79-06-1

For other data, click on the Table of Contents

Best Sections

Food Survey Values :

Acrylamide levels were measured in foods in the 2003 FDA Total Diet Survey, which represents 280 ready-to-eat foods in the US food supply(1). **Acrylamide** was generally not detected (detection limit 10 ppb) or detected infrequently in dairy, eggs, fats/oils, beverages, fruits, vegetables, legumes, mixtures (casseroles, sandwiches, soups, and pizzas), and meat/poultry/fish(1). Snack foods (corn/tortilla **chips**, microwave popcorn, **potato chips**, pretzels) contained some of the highest levels of **acrylamide**, ranging from 46 to 536 ppb(1). **Acrylamide** was also detected relatively frequently in the grains/starches/baked good category, with the highest levels found in graham crackers (211-647 ppb) and butter-type crackers (348-425 ppb)(1). **Acrylamide** was detected relatively infrequently in baby food products, with the highest levels found in arrowroot cookies (105-267 ppb), sweet potatoes (30-117 ppb), and teething biscuits (128-235 ppb)(1).

[(1) US Food and Drug Administration; Exploratory Data on Acrylamide in Food FY 2003 Total Diet Study Results. March 2004. Available at: <http://www.cfsan.fda.gov/~dms/acrydat2.html> as of April 7, 2004.]**PEER REVIEWED**

Food Survey Values :

Mean (ug/kg) **acrylamide** concentrations in various foods and food product groups from Norway, Sweden, Switzerland, the UK, and the US have been reported as: **potato** crisps/sweet **potato**: 1,312 (range 170-2,287, for n=38 samples); **potato chips**: 537 (<50-3,500, n=39); batter baked products: 36 (<30-42, n=2); bakery products: 112 (<50-450, n=19); biscuits, crackers, toast, bread crisps: 423 (<30-3,200, n=58); breakfast cereals: 298 (<30-1,346, n=29); corn crisps: 218 (34-416, n=7); soft bread: 50 (<30-

Links to Related Records in Other Databases - Microsoft ...

- [IRIS Record](#)
- [ITER Record](#)
- [CCRIS Record](#)
- [GENETOX Record](#)
- [TOXLINE SPECIAL Records](#)
- [TOXLINE CORE Records](#)
- [ChemIDplus Chemical Structure](#)

Select ITER

Contents

Contract all categories ☐Expand all categories ☐

Select

Clear

☐  [FULL RECORD](#)☐  [Substance Identification/Summary Table](#)☐  [Risk Data](#)

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Customer Service: tehip@tehl.nlm.nih.gov.

ACRYLAMIDE

CASRN: 79-06-1

For other data, click on the Table of Contents

Substance Identification/Summary Table:

Substance Name: ACRYLAMIDE

CAS Registry Number: **79-06-1**

Risk Values - Summary Table:

Summary Risk Table for: ACRYLAMIDE							
Risk Value Type \ Organization	ATSDR	Health Canada	IARC	ITER	NSF Int	RIVM	U.S.EPA
Noncancer Oral	--	--	--	--	--	--	✓
Cancer Oral	--	--	--	--	--	--	✓
Noncancer Inhalation	--	--	--	--	--	--	--
Cancer Inhalation	--	--	--	--	--	--	✓
✓ = Chemical evaluated and ITER data online.							

Risk Data :

Risk Data - Noncancer Oral:

ITER Noncancer Oral Risk Table for: ACRYLAMIDE							
Risk Value Parameter \ Organization	ATSDR	Health Canada	IARC	ITER	NSF Int	RIVM	U.S.EPA
Risk Value Name	--	--	--	--	--	--	RfD
Risk Value*	--	--	--	--	--	--	2E-4
Year	--	--	--	--	--	--	1988
Basis (Experimental)*	--	--	--	--	--	--	NOEL, 0.2
Basis (Adjusted)*	--	--	--	--	--	--	NA
Uncertainty Factor	--	--	--	--	--	--	1000
Critical Organ or Effect	--	--	--	--	--	--	Nervous System
Species	--	--	--	--	--	--	Rat
Study	--	--	--	--	--	--	Burek et al., 1980
View Specifics:	--	--	--	--	--	--	Click here

*In mg/kg body weight per day, unless otherwise specified.



Boolean Searching, Field Qualification, Other Search Features

- Upper Case Boolean Operators (AND, OR, NOT)
- Fields in brackets and post-qualified (e.g. benzene [na])
- Nested parentheses permitted
- Phrase searching with quotation marks (e.g. “coronary artery bypass”)
- Asterisk (*) for truncation (e.g. carcinogen*)

LinkOut from PubMed to HSDB

Display Abstract Show: 20 Sort Send to Text

All: 1

1: Chest. 2003 Nov;124(5):1716-23.
FREE full text article at www.chestjournal.org

Long-term intermittent exposure to high ambient CO₂ causes respiratory disturbance in submariners.

Margel D, White DP, Pillar G.

Israeli Naval Medical Department, Haifa, Israel.



BACKGROUND: During most of the cruise, submarines are detached from their environment. Therefore, O₂ levels are relatively low (19 kPa, 144 mm Hg) and CO₂ levels are high (1 kPa, 7.6 mm Hg). There are, however, periods during ventilation of the submarine in which CO₂ levels drop and O₂ levels increase. The objective of this study was to determine whether these unique gas changes might result in sleep-disordered breathing in submariners. METHODS AND MATERIALS: The sleep of eight healthy soldiers was assessed three times: (1) control night, in submarine docking; (2) at the beginning of the cruise (reflecting acute exposure to gas changes); and (3) at the end of the cruise (chronic exposure to gas changes). Each night was divided to three parts because of different CO₂ levels (secondary to ventilation of the submarine). Sleep and breathing were measured using the portable Watch PAT100 device (Itamar Medical, Ltd; Caesarea, Israel) to detect breathing abnormalities during sleep. RESULTS: Sleep and breathing data were categorized according to four CO₂ conditions: acute moderate (inhaled CO₂ levels of 2.3 to 5 mm Hg during first 1 to 2 nights of the cruise); acute high (inhaled CO₂ levels of 5 to 8 mm Hg during the first 1 to 2 nights of the cruise); chronic moderate (inhaled CO₂ levels of 2.3 to 5 mm Hg during nights 9 to 11); and chronic high (inhaled CO₂ levels of 5 to 8 mm Hg during nights 9 to 11).

Related Articles Link
Links
Compound via MeSH
Substance via MeSH
Books
LinkOut

The following [LinkOut](#) resources are supplied by external providers. These providers are responsible for maintaining the links.


1: [Margel D et al](#) Long-term intermittent exposu...[PMID: 14605040]

Full Text Sources

	 HighWire Press	Full Text
	EBSCO	Full Text
	MD Consult	Full Text
	Ovid Technologies, Inc.	Full Text
	ProQuest Information and Learning	PDF

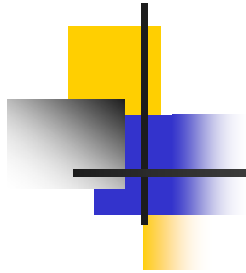
Libraries

Medical

 MEDLINEplus Health Information
[Sleep Apnea](#)

Molecular Biology Databases

 HSDB
[CARBON DIOXIDE](#)



Part IV

TOXLINE and Other Bibliographic Files



TOXLINE

TOXicology Literature onLine

- Covers pharmacological, biochemical, physiological, environmental, and toxicological effects of chemicals/other agents on living systems
- Citations, Abstracts, Keywords and/or MeSH (Medical Subject Headings)
- CAS Registry Numbers
- From 1965 (and earlier) to date
- Drawn from Secondary Sources, varying unit record formats
- Components – TOXLINE Core (on PubMed, accessible via TOXNET) and TOXLINE Special (on TOXNET). Project underway to consolidate Core and Special
- Nearly 3 ½ million toxicology related records combined



TOXLINE Core (on PubMed)

- Toxicology Subset limit of MEDLINE on PubMed
- Similar to TOXLINE's former TOXBIB subfile
- Drawn from standard biomedical journal literature
- Accessible directly on PubMed or from the TOXLINE search screen on TOXNET
- Some features of PubMed:
 - MeSH Searching
 - Limit by field, publication type, age, gender, language, human or animal, etc.
 - MyNCBI Cubby – to store and update search strategies
 - Related articles
 - LinkOut + Links to Books
 - Interlibrary Loan (Loansome Doc)



TOXLINE Special (on TOXNET)

- Technical Reports and Research Projects
 - Federal Research in Progress (FEDRIP)
 - Toxicology Document and Data Depository (NTIS)
 - Toxicology Research Projects (CRISP)
 - Toxic Substances Control Act Test Submissions (TSCATS)

- Special Journal and Other Research Literature
 - Developmental and Reproductive Toxicology (DART)
 - International Labour Office (CIS)
 - Swedish National Chemicals Inspectorate (RISKLINE)

- Meeting Abstracts (MTGABS)



TOXLINE Special (continued)

- Archival Collections (No Longer Being Updated)
 - Aneuploidy (ANEUPL)
 - Environmental Mutagen Information Center file (EMIC)
 - Environmental Teratology Information Center file (ETIC)
 - Epidemiology Information System (EPIDEM)
 - Hazardous Materials Technical Center (HMTC)
 - International Pharmaceutical Abstracts (IPA)
 - NIOSHTIC (NIOSH)
 - Pesticides Abstracts (PESTAB)
 - Poisonous Plants Bibliography (PPIB)
 - Toxicological Aspects of Environmental Health (BIOSIS)



TOXLINE Special (continued)

- Some Features of TOXLINE Special
 - Relevancy Ranking
 - Toggle between TOXLINE Special and TOXLINE Core
 - Automatic Mapping to MeSH terms – e.g. passive smoking --- tobacco smoke pollution
 - Link to TOXLINE Special from *ChemIDplus*
 - Related Articles

Note: Search algorithms and display formats of TOXLINE Special and TOXLINE Core vary.



Another Toxicology Literature File

Developmental and Reproductive Toxicology (DART/ETIC)

About 76,000 Records

- Covers Developmental and Reproductive Toxicology (including Teratology)
- Components – DART Core (on PubMed) and DART Special (on TOXNET)



Toxicology Literature Online (TOXLINE) - References from toxicology literature.

Select Database	
• ChemIDplus	?
• HSDB	?
• TOXLINE	?
• CCRIS	?
• DART	?
• GENETOX	?
• IRIS	?
• ITER	?
• Multi-Database	?
• TRI	?
• Haz-Map	?
• Household Products	?
• TOXMAP	?
• TOXNET Home	?

Search TOXLINE
<input type="text" value="toluidine bladder cancer"/>
(e.g. asphalt fumes roofers, calcium aging, Neville DM autoimmune)
<input type="button" value="Search"/> <input type="button" value="Clear"/> <input type="button" value="Help"/>
For chemicals, add synonyms and CAS numbers to search: <input checked="" type="radio"/> Yes <input type="radio"/> No
Search in <input checked="" type="radio"/> TOXLINE Special <input type="radio"/> TOXLINE Core on PubMed <input type="radio"/> Both ← Default
<input type="button" value="Limits"/> <input type="button" value="Browse the Index"/>

Env. Health & Toxicology	
	Portal to environmental health and toxicology resources.
<input type="button" value="VISIT SITE"/>	

Support Pages
▶ Help ▶ Fact Sheet ▶ Sample Record ▶ TOXNET FAQ

Enter chemical names, CAS Registry Numbers, other terms, etc.



TOXLINE Special Search Results

[Env. Health & Toxicology](#) [TOXNET](#) [TOXLINE Special](#)

Save
Checked Items

Sort

Details

History

Download

Modify Search

Basic Search

Browse Index

Help

TOXNET Home

toluidine bladder cancer

Search

Clear

Limits

SEARCH RESULTS PAGE

For chemicals, add synonyms and CAS numbers to search: ☒ Yes ☐ No

Items 1 through 20 of 29

Pages: 1 2

References are sorted in [relevancy ranked](#) order.

Click on **Sort** to change the order of the retrieved References.

Select Record	Reference
1 <input type="checkbox"/>	An Alternative Hypothesis for Bladder Cancer among Workers Exposed to ortho-Toluidine and Aniline Acquavella JF ; Wilson JD ; Conner P ; Bannister R ; Ward EM ; Roberts D ; Streicher R ; Boeniger M ; Fajen J Journal of the National Cancer Institute, Vol. 83, No. 22, pages 1686-1687, 15 references, 1991 [NIOSH]
2 <input type="checkbox"/>	Bladder Cancer in Workers Exposed to Aniline Tannenbaum SR ; Ward E ; Dankovic DA Journal of the National Cancer Institute, Vol. 83, No. 20, pages 1507-1508, 21 references, 1991 [NIOSH]
3 <input type="checkbox"/>	NIOSH Alert, Request for Assistance in Preventing Bladder Cancer from Exposure to o-Toluidine and Aniline Anonymous NIOSH Alert, NIOSH, U.S. Department of Health and Human Services, DHHS (NIOSH) Publication No. 90-116, 12 pages, 31 references, 1990 [NIOSH]
4 <input type="checkbox"/>	Monitoring of Aromatic Amine Exposures in Workers at a Chemical Plant with a Known Bladder Cancer Excess Ward EM ; Sabbioni G ; DeBord DG ; Teass AW ; Brown KK ; Talaska GG ; Roberts DR ; Ruder AM ; Streicher RP

To view
related records



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TOXLINE Special

[Env. Health & Toxicology](#) [TOXNET](#) [TOXLINE Special](#)

toluidine bladder cancer

Search

Clear

Limits

For chemicals, add synonyms and CAS numbers to search: ☒ Yes ☐ No

Item 1 of 29

An Alternative Hypothesis for **Bladder Cancer** among Workers Exposed to ortho-**Toluidine** and Aniline

Authors:

Acquavella JF
Wilson JD
Conner P
Bannister R
Ward EM
Roberts D
Streicher R
Boeniger M
Fajen J

Search terms
highlighted in red

Hotlinked
terms in blue

Source: Journal of the National Cancer Institute, Vol. 83, No. 22, pages 1686-1687, 15 references, 1991

Abstract:

The results of a study of **bladder cancer** in workers exposed to ortho-**toluidine** (95534) and aniline (62533) were discussed in a letter and a response. A NIOSH survey of workers employed at a chemical manufacturing facility in the 1950s and 1960s who were potentially exposed to ortho-**toluidine**, aniline, and other chemicals found an excess incidence of **bladder cancer**. The excess was attributed to exposure to ortho-**toluidine**. This finding was challenged. The findings of the NIOSH study were considered to be inconsistent with the results of two earlier

SELECTED RECORD PAGE

Keywords:

DCN-212754
NIOSH Author
Bladder cancer
Epidemiology
Amino compounds
Occupational exposure
Chemical industry workers
Cancer rates
Mortality data
Chemical composition

CAS Registry Numbers:

95-53-4
95-53-4
62-53-3
91-59-8
153-78-6

Coden:

JNCIAM

Entry Month: October, 1993

Year of Publication: 1991

Secondary Source ID: NIOSH/00213017

Document Number: NIOSH/00213017

NIOSH Sub-File

Set History - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Search *TOXLINE* for

- Search History will be lost after one hour of inactivity.
- To combine searches use # before search number. e.g. #2 AND #6.
- Searches may not be combined across databases.

Search	Database	Query	Time	Result
# 7	toxline	(" bladder cancer " " bladder neoplasms ") AND (toluidine OR 26915-12-8 [rn])	16:31:59	29
# 6	iter	(79-06-1 [rn])	16:30:32	1
# 5	iter	(79-06-1 [rn])	16:27:31	1
# 4	hsdb	[tox] [care] [htox] [htxv] [seri] [warn] [meds] [popl] [rtex] [body] [avdi] [minf] [envs] [rtex] [body] [avdi] [nats] [arts] [fate] [biol] [abio] [bioc] [koc] [vws] [watc] [effl] [seds] [atmc] [food] [plnt] [fish] [anml] [milk] acrylamide potato chips [oevc]	16:24:44	1
# 3	hsdb	(acrylamide OR propenamide OR ethylenecarboxamide OR akrylamid OR "acrylic amide")	16:09:12	37
	toxline, dart, hsdb, iris,			

To combine search statements or enter a new search.

A way to review your search strategies.

Toxicology Literature Online (TOXLINE) - References from toxicology literature.

Select Database

- [ChemIDplus](#)
- [HSDB](#)
- [TOXLINE](#)**
- [CCRIS](#)
- [DART](#)
- [GENETOX](#)
- [IRIS](#)
- [ITER](#)
- [Multi-Database](#)
- [TRI](#)
- [Haz-Map](#)
- [Household Products](#)
- [TOXMAP](#)
- [TOXNET Home](#)

Search TOXLINE

Add chemical synonyms and CAS numbers to search: ☒ Yes ☐ No

Search in:

☐ [TOXLINE Special](#)

☐ [TOXLINE Core on PubMed](#)

☒ Both

Search fields:

☒ All fields

☐ Titles

☐ Authors (e.g., Smith H)

Search: ☐ exact words ☒ singular & plural forms ☐ word variants

Search records with: ☐ the phrase ☒ all words ☐ any words

Maximum records returned

Year of Publication: through

Only search documents added in the last months.

TOXLINE Components

- All
- ANEUPL
- BIOSIS
- CIS
- CRISP
- DART

Language

- All
- English
- Afrikaans
- Arabic
- Armenian
- Azerbaijani

To select more than one component, click while holding the CTRL (PC) or CMD (Mac) key.

Full Search:
Nickel AND (worker* OR
industr* OR occupation*)



TOXNET

Toxicology Data Network

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TOXLINE Special Search Results

Env. Health & Toxicology TOXNET TOXLINE Special

nickel AND (worker* OR industr* OR

For chemicals, add synonyms and CAS numbers to search: ☒ Yes ☐ No

Items 1 through 12 of 12

References are *unsorted*.

Click on **Sort** to change the order of the retrieved References.

Select Record	Reference
1 <input type="checkbox"/>	Retrospective Assessment of Mixed Chemical Exposures RAMACHANDRAN G Crisp Data Base National Institutes of Health [CRISP]
2 <input type="checkbox"/>	Genetic Determinants of Nickel-induced Lung Injury LEIKAUF G Crisp Data Base National Institutes of Health [CRISP]
3 <input type="checkbox"/>	Health Risk Reduction--Metal Accumulating Desert Plants GARDEA-TORRESDEY JL Crisp Data Base National Institutes of Health [CRISP]
4 <input type="checkbox"/>	Metals in exhaled breath condensate as COPD biomarkers MUTTI A Crisp Data Base National Institutes of Health [CRISP]
5 <input type="checkbox"/>	DERMAL ABSORPTION OF CUTTING FLUID MIXTURES BAYNES RE Crisp Data Base National Institutes of Health [CRISP]
6 <input type="checkbox"/>	Asphalt (Bitumen) Anonymous Concise International Chemical Assessment Document (CICAD) Vol:59 (2004) 43 p [RISKLINE]



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and the National Institutes of Health

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PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

for nickel AND (worker* OR industr* OR occupation*) A [Save Search](#)

[Limits](#) [Preview/Index](#) [History](#) [Clipboard](#) [Details](#)

Display [Summary](#) Show [20](#) Sort by Send to

All: 217

Review: 24

[X](#)

Items 1 - 20 of 217

Page [1](#) of 11 [Next](#)

☐ 1: [Buondanno A, Cioffi R, Santoro L](#)

[Related Articles, Links](#)

Characterization of raw and stabilized waste in relation to toxic metals mobility in realistic landfilling scenarios.
Ann Chim. 2005 Nov-Dec;95(11-12):823-32.
PMID: 16398346 [PubMed - indexed for MEDLINE]

☐ 2: [Das M, Dixit S, Khanna SK](#)

[Related Articles, Links](#)

Justifying the need to prescribe limits for toxic metal contaminants in food-grade silver foils.
Food Addit Contam. 2005 Dec;22(12):1219-23.
PMID: 16356885 [PubMed - in process]

☐ 3: [Cula AM](#)

[Related Articles, Links](#)

Occupational allergic diseases as a clinical model to approach specific environmental reactivity.
Acta Biomed Ateneo Parmense. 2005;76 Suppl 2:45-9.
PMID: 16350549 [PubMed - in process]

☐ 4: [Baynes RE, Brooks JD, Barlow BM, Riviere JE](#)

[Related Articles, Links](#)

NDELA and nickel modulation of triazine disposition in skin.
Toxicol Ind Health. 2005 Oct;21(9):197-205.
PMID: 16342470 [PubMed - indexed for MEDLINE]

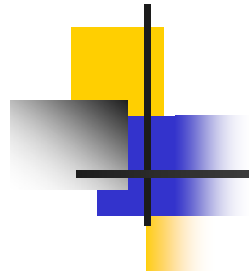
☐ 5: [Osuji LC, Adesiyun SO](#)

[Related Articles, Links](#)

Extractable hydrocarbons, nickel and vanadium contents of ogbodo-isiokpo oil spill polluted soils in niger delta, Nigeria.
Environ Monit Assess. 2005 Nov;110(1-3):129-39.
PMID: 16308783 [PubMed - in process]

☐ 6: [Blanusca M, Varnai VM, Piasek M, Kostial K](#)

[Related Articles, Links](#)



Part V

TRI, Specialty Files, New Initiatives



Toxics Release Inventory (TRI) U.S. Environmental Protection Agency (EPA)

TRI 87-03 (17 years) – About 1,500,000 Records

- Facility Identification (Facility Name, Address, Phone, etc.)
- Substance Identification (Chemical Name, CAS RN, Uses, etc.)
- Environmental Release of Chemical (in Air, Water, Land, Underground Injection)
- Waste Treatment
- Off-Site Waste Treatment
- Source Reduction and Recycling (Quantity Released, Energy Recovery, Quantity Recycled, Quantity Treated)



TRI Background

- Right-to-Know Movement – Workplace, Community
- OSHA Hazard Communication Standard – 1983
- SUPERFUND = CERCLA (1980)
- Bhopal (1984) and smaller scale chemical disasters
- SARA (Superfund Amendments and Reauthorization Act) (1986)
 - Title 3 = Emergency Planning and Community Right-to-Know Act
 - Section 313 = Toxic Release Reporting
- Pollution Prevention Act of 1990

Toxics Release Inventory (TRI) - Annual environmental releases of over 600 toxic chemicals by U.S. facilities.

Select Database

- ChemIDplus
- HSDB
- TOXLINE
- CCRIS
- DART
- GENETOX
- IRIS
- ITER
- Multi-Database
- **TRI**
- Haz-Map
- Household Products
- TOXMAP
- TOXNET Home

Search TRI

Chemical Name or CAS Registry Number
methyl ethyl ketone

Search **Clear** **Help**

Add synonyms and CAS numbers to search:
☒ Yes ☐ No

TRI Files:
Select All

☒ 2003 ☒ 2002 ☒ 2001 ☐ 2000
☐ 1999 ☐ 1998 ☐ 1997
☐ 1996 ☐ 1995 ☐ 1994
☐ 1993 ☐ 1992 ☐ 1991
☐ 1990 ☐ 1989 ☐ 1988
☐ 1987

Facility Names
(Separate multiple entries with commas)

Facility Location
(Separate multiple entries for state, city/state, or zip with commas. For example: NJ, DE, or Trenton/NJ, Houston/TX, or 21113, 21224.)
marshfield/mo

☐ State ☒ City/State
☐ County/State ☐ Zip

Standard Industrial Classification Code
(Separate multiple entries with commas)

Greater Than 10,000 lbs **for**
Total Environmental Release

Search **Browse the Index**

Env. Health & Toxicology

Portal to environmental health and toxicology resources.

VISIT SITE

Support Pages

- ▶ Help
- ▶ Fact Sheet
- ▶ Sample Record
- ▶ TOXNET FAQ

Select all years or any combination.

Geographic search included

Can range from 0 and in power of 10 amounts to 100,000,000 lbs.

Ranging by total release amount. Can also range on air, water, land, underground injection or click on "No Release Selected."

To view summary environmental and off-site waste transfer release totals.

- Calculate Release!
- Save Checked Items
- Sort
- Details
- History
- Download
- Modify Search
- New Search
- Browse Index
- Help
- TOXNET Home

TRI2003, TRI2002, TRI2001 Search Results

[Env. Health & Toxicology](#) [TOXNET](#) [TRI2003, TRI2002, TRI2001](#)

Please click on Modify Search button to modify TRI search strategy.



TRI2003: 1 TRI2002: 1 TRI2001: 1
Click on the database name to repeat the search in that database

Items 1 through 3 of 3
Facility/Substance Names are unsorted.

Select Record	Database	Facility/Substance Name
1 <input type="checkbox"/>	TRI2003	YORK CASKET-MISSOURI METHYL ETHYL KETONE MARSHFIELD, MO
2 <input type="checkbox"/>	TRI2002	YORK CASKET-MISSOURI METHYL ETHYL KETONE MARSHFIELD, MO
3 <input type="checkbox"/>	TRI2001	YORK CASKET-MISSOURI METHYL ETHYL KETONE MARSHFIELD, MO

Contents

Contract all categories

Expand all categories

Select

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- ☐  [FULL RECORD](#)
- ☐   [Facility Identification](#)
- ☐   [Substance Identification](#)
- ☒   [Environmental Release of Chemical](#)
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TRI2003

METHYL ETHYL KETONE YORK CASKET-MISSOURI MARSHFIELD, MO

For other data, click on the Table of Contents

Environmental Release of Chemical:

Non-Point Air Emissions Estimates:

Non-Point Air Release: 2,500 lbs./rep yr. 2003

Basis of Estimate: (C) Mass Balance Calculations

Point Air Emissions Estimates:

Point Air Release: 24,100 lbs./rep yr. 2003

Basis of Estimate: (C) Mass Balance Calculations

Total Air Release: 26,600 lbs./rep yr. 2003

Water Discharge Estimates:

Receiving Stream: NA

Water Release: NA

Total Water Release: 0 lbs./rep yr. 2003

Releases to Underground Injection:

Underground Injection Well Class: Underground Injection On-site to Class I wells

Underground Injection Release: NA

Underground Injection Well Class: Underground Injection On-site to Class II-V wells

Underground Injection Release: NA

Underground Injection Total: 0 lbs./rep yr. 2003

Land Release Estimates:

Disposal Method: RCRA Subtitle C Landfills

Land Release: NA

Disposal Method: Other Landfills

Land Release: NA

Disposal Method: Land Treatment/Application/Farming

Land Release: NA

Disposal Method: RCRA Subtitle C Surface Impoundments

Land Release: NA

Disposal Method: Other Surface Impoundment

Land Release: NA

Disposal Method: Other Disposal

Land Release: NA

Total Land Release: 0 lbs./rep yr. 2003

Total Environmental Release: 26,600 lbs./rep yr. 2003

Mapping capability.





Chemical

Reference Info

HSDB

- [Human Health Effects](#)
- [Manufacturing/Use Info](#)
- [Env. Fate / Exposure](#)

ATSDR

- [ToxFAQs & Public Health Statements](#)
- [Public Health Assessments](#)
- [General Documents](#)

Chemical & Map Area

Toxicology Biblio. Info

Search: [chemical](#) & [places](#)

- ☒ TOXLINE Special
- ☒ TOXLINE Core on PubMed

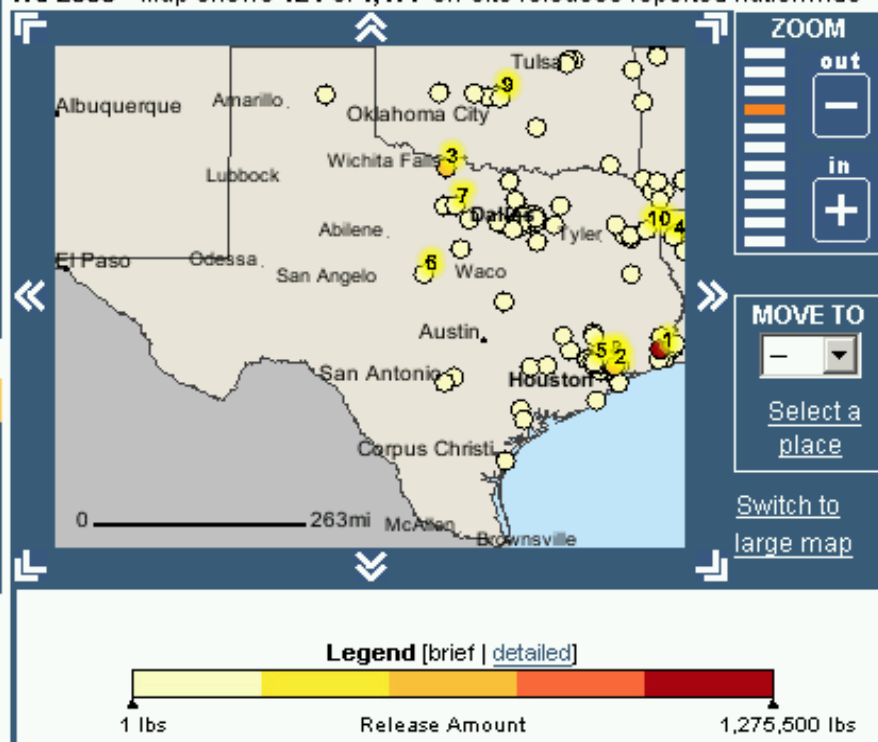
Questions

- [What TRI chemicals are mapped in TOXMAP?](#)
- [Does TOXMAP show all sources of toxic chemicals released into the environment?](#)
- [How accurate is TRI data?](#)

METHYL ETHYL KETONE (78-93-3)

TRI-2003 - Map shows 121 of 1,477 on-site releases reported nationwide

[Print this map](#)



Apply to this map

- [U.S. Census Data](#)
- [Reference Data](#)

Facilities reporting to TRI

[Hide list](#)

Page 1 of 13

(121 releases total)

1. [EXXONMOBIL OIL BEAUMONT REFINERY](#)
2. [EXXONMOBIL REFINING & SUPPLY BAYTOWN REFINERY](#)
3. [TEXAS RECREATION CORP](#)
4. [CALUMET LUBRICANTS CO SHREVEPORT REFINERY](#)
5. [SOUTHLINE METAL PRODUCTS CO](#)
6. [3M COBROWNWOOD](#)
7. [AERO-MARINE ENG. INC.](#)
8. [LYONDELL CHEMICAL CO](#)
9. [U.S. AIR FORCE TINKER AFB](#)
10. [CROMPTON CORP MARSHALL FACILITY](#)

Map Options

- [Search for another chemical](#)
- [Start over](#)

1. EXXONMOBIL OIL BEAUMONT REFINERY

1795 BURT STREET
 BEAUMONT, TX 77704

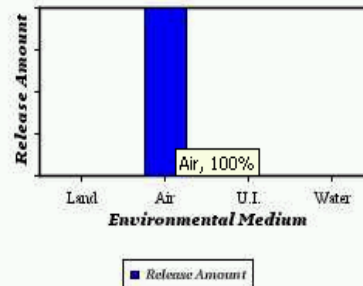
EPA Facility Number: 77701BMNTREASTE [top](#)

Emissions Estimates:

METHYL ETHYL KETONE

Environmental Medium	Release Amount (lbs./rep yr. 2003)
Air	1,108,900
TOTAL	1,108,900

Distribution By Medium*



* Small values may not be visible on chart. Refer to Chemical Table at left

- [Details about this release](#)
- [All chemicals reported by this facility](#)

2. EXXONMOBIL REFINING & SUPPLY BAYTOWN REFINERY

2800 DECKER DRIVE
 BAYTOWN, TX 77520-2099

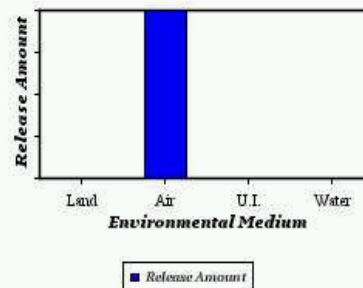
EPA Facility Number: 77522XXNBY2800D [top](#)

Emissions Estimates:

METHYL ETHYL KETONE

Environmental Medium	Release Amount (lbs./rep yr. 2003)
Land	11
Air	748,600
Water	440
TOTAL	749,051

Distribution By Medium*



* Small values may not be visible on chart. Refer to Chemical Table at left

- [Details about this release](#)
- [All chemicals reported by this facility](#)



Toxics Release Inventory (TRI) Program

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Methyl Ethyl Ketone (MEK) To Be Removed From The Toxics Release Inventory (TRI) List: No Reports Are Required For The 2004 Reporting Year

- [Why is MEK being removed from the TRI List?](#)
- [What type of notice will EPA publish?](#)
- [Why are no MEK reports required for reporting year 2004?](#)
- [Should facilities that have already filed a 2004 TRI report for MEK withdraw those reports?](#)
- [How can I get more background on EPA's TRI Program?](#)
- [What is the status of the petition to remove MEK from the Clean Air Act list of hazardous air pollutants?](#)

Q: Why is MEK being removed from the TRI List?

A: EPA is taking the regulatory action necessary to remove MEK from the TRI list as required by the District Court.

In March of 1998, EPA denied a petition from the Ketones Panel of the Chemical Manufacturers Association (CMA) to remove MEK from the TRI list (63 FR 15195). The American Chemistry Council (ACC) (formerly CMA) challenged EPA's decision in U.S. District Court for the District of Columbia. On March 26, 2004, the District Court upheld EPA's petition denial on the basis that EPA's denial of the petition was lawful and appropriate. ACC appealed the District Court's decision to the D.C. Circuit Court of Appeals. On May 10, 2005, the D.C. Circuit Court vacated the District Court's decision and remanded "so that it can direct EPA to delete MEK from the TRI." The Circuit Court issued its mandate on June 13, 2005.

Q: What type of notice will EPA publish?

A: A final rule that removes MEK from the TRI list pursuant to the Court's order has been signed and will publish in the Federal Register shortly. The rule will make the removal of MEK effective for the 2004 reporting year.

Q: Why are no MEK reports required for reporting year 2004?

A: EPA will not require facilities to report MEK for the 2004 reporting year because the court order removing MEK from the TRI was issued before July 1, 2005. The final rule states that TRI facilities are not required to report releases of and other waste management information on MEK that occurred during the 2004 reporting year or for activities in the future.

Q: Should facilities that have already filed a 2004 TRI report for MEK withdraw those reports?

A: No, there is no need for facilities to withdraw MEK reports that they have already filed for reporting year 2004. EPA will not be including those reports in the 2004 public Toxics Release Inventory.



Search

as



Agent



Disease



Job



Text Search

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3. [Alphabetically](#)

- **Occupational Diseases**

1. [By Types of Diseases](#)
2. [By Jobs and Symptoms](#)
3. [Alphabetically](#)

- **High Risk Jobs**

1. [By Types of Jobs](#)
2. [Alphabetically](#)

Haz-Map: Information on Hazardous Chemicals and Occupational Diseases

by

Jay A. Brown, M.D., M.P.H.

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[Search TOXNET](#)

carpenters was searched as word(s) in all of the text fields. Results are sorted in relevancy ranked order.

Search results: 2 record(s) found in Agents table. [Next Section](#)

- [Wood dust, all soft and hard woods](#)
- [Chlorothalonil](#)

Search results: 1 record(s) found in Diseases table. [Next Section](#) [Back to Top](#)

- [Nasal sinus cancer](#)

Search results: 3 record(s) found in Jobs table. [Next Section](#) [Back to Top](#)

- [Helpers--Carpenters](#)
- [Carpenters](#)
- [Cabinetmakers & Bench Carpenters](#)

Search results: 1 record(s) found in Industries table. [Next Section](#) [Back to Top](#)

- [Finish Carpentry Contractors](#)

Haz-Map Search	More Searches	Haz-Map Help	Glossary	References
Browse Haz-Map		Search TOXNET		
Disease/Syndrome	Nasal sinus cancer			
Category	Cancer, Occupational			
Acute/Chronic	Chronic			
Comments	<p>A sentinel health event (occupational) associated with exposure to hardwood dusts (woodworkers, cabinet and furniture makers); radium (radium processors, dial painters); chromates (producers, processors & users); nickel (smelting & refining); chlorophenols (sawmill workers & carpenters); and an unknown agent (boot & shoe industry); [Mullan] Agents associated with sino-nasal cancer include cigarette smoking, wood and leather dust, nickel refining, chromates, mustard gas manufacturing, isopropanol manufacturing, and possibly welding. [LaDou, p. 296] Softwood dust is associated with squamous cell carcinoma, and hardwood dust is associated with adenocarcinoma of the nasal cavity. An increased risk exists for sawmill workers, furniture workers, wood products workers, and carpenters. No increased risk exists for workers in forestry, logging, or paper and pulp. [Dement J. Wood Dust. In: Bingham E, Cohns B, Powell C, eds. Patty's Toxicology, 5th ed. New York: John Wiley & Sons; 2001:619-49] Seventy percent of patients with sinonasal adenocarcinoma reported in Denmark between 1965 and 1974 had worked for many years in wood-working jobs. [Skov T, Mikkelsen S, Svane O, Lynge E. Reporting of occupational cancer in Denmark. Scand J Work Environ Health 1990;16:401-5]</p>			
Latency/Incubation	Years to decades			
Diagnostic	Biopsy			
ICD-9 Code	160.0			

Highlight terms in text and click

Haz-Map Search		More Searches		Haz-Map Help		Glossary		References	
Browse Haz-Map						Search TOXNET			
Agent Name		Wood dust, all soft and hard woods							
Major Category		Biological Agents							
Category		Wood Dusts & Extracts							
Description		Dust from various types of wood;							
Comments		<p>Softwood dust is associated with squamous cell carcinoma, and hardwood dust is associated with adenocarcinoma of the nasal cavity. An increased risk for nasal sinus cancer exists for sawmill workers, furniture workers, wood products workers, and carpenters. No increased risk exists for workers in forestry, logging, or paper and pulp. [Dement J. Wood Dust. In: Bingham E, Cohns B, Powell C, eds. Patty's Toxicology, 5th ed. New York: John Wiley & Sons; 2001:619-49] The nontropical woods such as white pine rarely cause allergic contact dermatitis in carpenters. [Marks, p.314] "Occupational asthma due to Western red cedar dust exposure is the most common type of occupational asthma in the Pacific Northwest." [Chan-Yeung & Malo, 1994] There are many other wood dusts that can cause asthma including oak, mahogany, African maple, Central American walnut, ash, ebony, cinnamon, etc. IARC classifies hardwoods as human carcinogens.</p>							
Exposure Assessment									
Skin Designation (ACGIH)		No							
TLV (ACGIH)		1 mg/m3(beech and oak hardwood), 5 mg/m3(softwood)							
STEL (ACGIH)		10 mg/m3(softwood)							
Explanatory Notes		Notice of Intended Change (for 2002): TLV = 2 mg/m3 for nonallergenic and noncarcinogenic wood dust, 0.5 mg/m3 for Western red cedar, and 1mg/m3 for other respiratory allergenic wood dust, birch, mahogany, teak, walnut, oak and beech. [ACGIH]							
Adverse Effects									
IARC Carcinogen		Known Carcinogen							

Haz-Map Search		More Searches	Haz-Map Help	Glossary	References
Browse Haz-Map				Search TOXNET	
Job Name	Carpenters				
Definition	Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Include brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways to control the proper circulation of air through the passageways and to the working places. [SOC] "The nontropical woods (e.g., white pine) used by carpenters rarely cause allergic contact dermatitis." [Marks, p. 314]				
Category	Construction				
SOC Code	47-2031				

Haz-Map Search		More Searches	Haz-Map Help	Glossary	References
Browse Haz-Map			Search TOXNET		
Industry Name	Finish Carpentry Contractors				
Comments	Carpenters and joiners had increased risk for nasal cancer and Hogkin's lymphoma from wood dust and solvents. [BC Cancer Agency]				
Description	This industry comprises establishments primarily engaged in finish carpentry work. The work performed may include new work, additions, alterations, maintenance, and repairs.				
Category	Construction				
NAICS Code	238350				
Related Information in Haz-Map					
Job Tasks	High risk job tasks associated with this industry: <ul style="list-style-type: none">• Apply arsenic preservatives to wood• Installed insulation before 1975• Machine allergenic wood and inhale dust• Remove insulation installed before 1975• Remove lead coatings• Saw or sand arsenic-treated wood• Spray epoxy or polyurethane paint, shellac, lacquer, or varnish• Use epoxy, isocyanate, or formaldehyde-resin adhesives, finishes, or sealants• Use n-hexane as a solvent in glues, coatings, or degreasers• Use polyfunctional aziridine hardener in paints, varnishes, or other coatings				

Household Products Database

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MSDS

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Health & Safety Information on Household Products

What's under your kitchen sink, in your garage, in your bathroom, and on the shelves in your laundry room? Learn more about what's in these products, about potential health effects, and about safety and handling.

Information in the Household Products Database is taken from a variety of publicly available sources, including brand-specific labels and Material Safety Data Sheets ([MSDS](#)) prepared by manufacturers.

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Lubricant, Sealant,
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Cleaners, Toilet Bowl Cleaner,
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Herbicide, Insecticide,
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Brand Information

Brand Name: Old Spice Shave Cream
Form: aerosol foam
Product Category: Personal care/use >> Men's Products >> shaving cream/gel
Customer Service No.: 800-262-1637
Date Entered: 2001-05-31
Related Items: [Products with similar usage in this database](#)

Manufacturer

Manufacturer: Procter & Gamble Co.
Address: P.O. Box 599
City: Cincinnati
State: OH
Zip Code: 45201
Telephone Number: 513-983-1100
Fax Number: 513-562-4600
Toll Free Number: 800-543-7270
Date Info Verified: 2003-01-01
Related Items: [Products by this manufacturer](#)

Health Effects

[Search TOXNET](#)

The following information (Health Effects, Handling/Disposal, and Ingredients) is taken from the product label and/or the [Material Safety Data Sheet \(MSDS\)](#) prepared by the manufacturer. The National Library of Medicine does not evaluate information from the product label or the Material Safety Data Sheet.

Acute Health Effects: From MSDS:
ROUTES OF ENTRY: Skin, oral, eye, inhalation
HEALTH HAZARDS (ACUTE AND CHRONIC): Acute - eye: mild transient irritation; oral: gastrointestinal irritation.
Chronic - N/A

SIGNS OF SYMPTOMS OF EXPOSURE: Eye - transient burning/stinging/tearing
Oral - nausea, vomiting, diarrhea

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

Chronic Health Effects: MSDS: Chronic: None known
Carcinogenicity: The manufacturer's Material Safety Data Sheet (MSDS) does not address the subject of carcinogenicity.

First Aid: MSDS: EMERGENCY AND FIRST AID PROCEDURES: Eye - flush with water for 15 minutes;
Oral - dilute with fluids; Skin - rinse thoroughly with water.

Health Rating: N
Flammability Rating: N
Reactivity Rating: N
HMIS Rating Scale: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe;
N = No information provided by manufacturer; * = Chronic Health Hazard

MSDS Date: 1998-08-19

Handling/Disposal

Handling: MSDS: PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Store in a cool dry area in a properly labeled, tightly closed container.
OTHER PRECAUTIONS: Do not expose to heat or ignition source.

Disposal: MSDS: WASTE DISPOSAL METHOD:
Dispose in accordance with local, state, and Federal regulations.

Ingredients from MSDS/Label

Chemical	CAS No / Unique ID	Percent
Isobutane	000075-28-5	
Butane	000106-97-8	
Propane	000074-98-6	
Fragrance(s)/perfume(s)	000000-00-1	
Lanolin	008006-54-0	
Stearic acid	000057-11-4	
Triethanolamine	000102-71-6	
Sodium lauryl sulfate (SLS)	000151-21-3	
Laureth-23	999999-11-0	
Methylparaben	000099-76-3	
Aloe extract	008001-97-6	
Water	007732-18-5	

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Drinking Water	Factory	Homes	Offices & Stores	School	Park	All Locations
----------------	---------	-------	------------------	--------	------	---------------

Arsenic	Asbestos	Benzene	Carbon Monoxide	Chromium	Lead	All Chemicals
---------	----------	---------	-----------------	----------	------	---------------

Tox Town

Text Version

Welcome to the Town

An introduction to toxic chemicals and environmental health risks you might encounter in everyday life, in everyday places.

- **Neighborhoods**

Select a view of the **Town**, **City**, **US-Mexico Border** or **Farm** to learn about urban, suburban, farm and border town health risks.

- **Locations**

Click on a location in the neighborhood, like the school, and find out more about the chemicals that could be in that location. Also learn about health risks that might be in that location.

- **Chemicals**

Roll your mouse over a chemical name to see where it might be found in the neighborhood. Then click the button for selected Internet information on that chemical.

- **Are these chemicals in MY community?**

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This Web site aggregates resources related to toxicology and environmental health education, its study and teaching, career paths and opportunities, including accreditation, and outreach for the public.

Academic Program Directories

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- ☒ TRI-2003

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- ☐ CDC - NASD
- ☐ CPSC
- ☐ CSB
- ☐ DOE
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PFOA

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ChemIDplus - 1	DART - 4	GENE-TOX - 0	Haz-Map - 1
Household Products - 0	IRIS - 0	ITER - 0	TRI-2003 - 0

Other NLM

MedlinePlus - 11	PubMed - 191	Arctic Health - 0	Bookshelf - 0
ClinicalTrials.gov - Canceled	DIRLINE - 0	PubMed Central - 28	NLM Catalog - 1

77 Initial Results for: PFOA...

Result Clusters

in Relevance Order

in Relevance Order

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☐ perfluorooctanoic acid... (33)

☐ perfluorooctanoic acid (18)

>> [PERFLUOROOCTANOIC ACID](#) [\[Preview\]](#)

HSDB - Synonym: pfoa335-67-1

[PERFLUOROOCTANOIC ACID](#) [\[Preview\]](#)

CCRIS - Synonym: pfoa335-67-1



More to Come
















- HSDB Automated Indexing
- Updating and Expansion of HSDB's Med Surveillance
- World Library of Toxicology, Chemical Safety, and Environmental Health
- Revision of Tox-Tutor in partnership with U.S. SOT
- Drugs and Lactation Database
- TOXREF – Therapeutic/Normal, Toxic, Lethal Levels of chemicals in biological samples
- REMM – Radiological Event Medical Management
- Endocrine Tox Database – Silent Spring Institute
- Environmental Health Nomenclature Collaboration
- Environmental Information Coalition/Earth Portal
- Public Health Law Information Project

Contents

Contract all categories ☐Expand all categories ☐

Select

Clear

- ☐  [FULL RECORD](#)
- ☐  [Drug Levels and Effects](#)
 - ☐  [Summary of Use during Lactation](#)
 - ☐  [Drug Levels](#)
 - ☐  [Effects in Breastfed Infants](#)
 - ☐  [Possible Effects on Lactation](#)
 - ☐  [AAP Category](#)
 - ☐  [References](#)
- ☐  [Substance Identification](#)
 - ☐  [Substance Name](#)
 - ☐  [CAS Registry Number](#)
 - ☐  [Drug Class](#)
- ☐  [Administrative Information](#)
 - ☐  [LACT Record Number](#)
 - ☐  [Last Revision Date](#)

Digoxin

CASRN: 20830-75-5

*For other data, click on the Table of Contents***Drug Levels and Effects:****Summary of Use during Lactation:**

Because of the low levels of digoxin in breastmilk, amounts ingested by the infant are small and would not be expected to cause any adverse effects in breastfed infants. If the mother is to receive digoxin intravenously, avoidance of breastfeeding for 2 hours after the dose will lessen the dose the infant receives.

Drug Levels:

Maternal Levels. In 11 women taking oral digoxin 0.25 mg daily, milk digoxin levels obtained on days 3 to 7 postpartum were relatively constant at 0.644 mcg/L.[1] The amounts in milk represent an infant dosage of 2.3% of the maternal weight-adjusted dosage or 0.97 mcg/kg/day which is about 10% of the neonatal dosage.

Milk digoxin levels were 0.41 and 0.78 mcg/L in 2 mothers taking digoxin 0.25 mg daily.[2]

Milk digoxin levels ranged from undetectable (<0.5 mcg/L) to 1 mcg/L[3] in 5 women treated with unspecified doses of digoxin. Milk and serum levels were similar.[3]

A milk digoxin level of 1.9 mcg/L was measured in a mother taking digoxin 0.75 mg daily during pregnancy and postpartum.[4]

World Library of Toxicology, Chemical Safety, and Environmental Health

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or click on map below:



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GLOBALERT

RESOURCES

TEHIP

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GERMANY



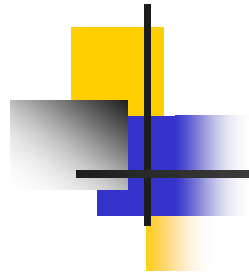
[VIEW MAP OF GERMANY](#)

- [Government Agencies](#)
- [Non-Government Organizations](#)
- [Universities](#)
- [Professional Societies](#)
- [Poison Information/Control Centers](#)
- [Miscellaneous Resources](#)
- [Key Publications](#)
- [Legislation](#)
- [About Germany](#)
- [International MEDLARS Center](#)
- [IFCS National Focal Point](#)
- [TOXLINE References](#)
- [Country Correspondents](#)

Note: Clicking on English or German titles, below, will link to respective language Web sites, where available; DB = Searchable Database.

Government Agencies

- [Committee for Occupational Safety and Safety Technology of the Federal States \(Länderausschuss für Arbeitsschutz und Sicherheitstechnik\)](#)
- [Federal Ministry of Consumer Protection, Food and Agriculture \(Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft\)](#)
 - [Federal Biological Research Centre for Agriculture and Forestry \(Biologische Bundesanstalt für Land- und Forstwirtschaft\)](#)
 - [Federal Institute for Risk Assessment \(Bundesinstitut für Risikobewertung\)](#)
 - [Chemicals and Contact Allergy \(Chemikalien und Kontaktallergie\) \(DB\)](#)
 - [Chemicals Information System for Consumer-relevant Substances \(Chemikalieninformationssystem zu verbraucherrelevanten Stoffen - CIVS\) \(DB\)](#)



Part VI

Non-NLM Resources



Professional Associations

- Society of Toxicology – <http://www.toxicology.org/>
- Society of Environmental Toxicology and Chemistry – <http://www.setac.org>
- American Academy of Clinical Toxicology – <http://www.clintox.org>
- American Association of Poison Control Centers – <http://www.aapcc.org>
- Society of Risk Analysis – <http://www.sra.org>
- Other groups in environmental health, occupational health, industrial hygiene, health physics etc.



U.S. Government Resources

- Agency for Toxic Substances and Disease Registry (ATSDR) – <http://www.atsdr.cdc.gov>
- Environmental Protection Agency (EPA) – <http://www.epa.gov>
- Food and Drug Administration – <http://www.fda.gov>
 - National Center for Toxicological Research – <http://www.fda.gov/nctr>
- National Institute for Occupational Safety and Health – <http://www.cdc.gov/niosh>



U.S. Government Resources (continued)

- National Institute of Environmental Health Sciences – <http://www.niehs.nih.gov>
- National Toxicology Program – <http://ntp-server.niehs.nih.gov>
- U.S. Chemical Safety and Hazard Investigation Board – <http://www.csb.gov>

Some State Government Sites

- New Jersey Department of Health and Senior Services – Division of Epidemiology, Environmental and Occupational Health – <http://www.state.nj.us/health/eoh>
- California – Office of Environmental Health Hazard Assessment – <http://www.oehha.ca.gov>



Some Chemical Databases

- Chemfinder – <http://www.chemfinder.com>
- Scorecard (from Environmental Defense) – <http://www.scorecard.org>
- Environmental Fate Databases & more (from Syracuse Research Corporation) – <http://www.syrres.com/esc/efdb.htm>
- EXTOXNET (pesticide information) – <http://ace.orst.edu/info/extoxnet>



Some Chemical Databases (continued)

- PAN (Pesticide Action Network) Pesticides Database – <http://www.pesticideinfo.org>
- Where to Find Material Safety Data Sheets on the Internet – <http://www.ilpi.com/msds>
- RxList, the Internet Drug Index – <http://www.rxlist.com>
- International Programme for Chemical Safety (IPCS) INCHEM – <http://www.inchem.org/>

Also Consider:

- Scirus - Elsevier Science - <http://www.scirus.com/>



Other Web Sites

- UNEP (United Nations Environment Programme) Chemicals – <http://www.chem.unep.ch>
- Intergovernmental Forum on Chemical Safety - <http://www.who.int/ifcs/>
- Inter-Organization Programme for the Sound Management of Chemicals - <http://www.who.int/iomc/>
- National Council for Science and the Environment – <http://www.ncseonline.org>
- Society of Environmental Journalists – <http://www.sej.org>
- TEHIP/NLM Web Links – <http://sis.nlm.nih.gov/enviro/toxweblinks.html>



Some Commercial (\$) Databases

- ARIEL Insight – Ariel Research – <http://www.arielresearch.com>
- BIOSIS Previews – BIOSIS – <http://www.biosis.org>
- Chemical Abstracts & CAS Registry – Chemical Abstracts Service – <http://www.cas.org> (also <http://stnweb.cas.org>)
- CCINFOweb (CHEMINDEX & IPCS/INCHEM are free) – CCOHS – <http://www.ccohs.ca>
- CIS Database (on occupational health) (from the International Labour Office) (free as a TOXLINE subfile) – <http://www.ilo.org/public/english/protection/safework/cis/products/cisdoc.htm>



Some Commercial (\$) Databases (continued)

- EMBASE – Elsevier Science – <http://www.embase.com>
- Environment Abstracts – Congressional Information Service – available from Dialog - <http://www.dialog.com/>
- MICROMEDEX Databases – MICROMEDEX – <http://www.micromedex.com>
- Science Direct - Elsevier - <http://www.sciencedirect.com/>
- Toxicology Abstracts – Cambridge Scientific Abstracts – <http://www.csa.com>
- Web of Science – ISI – <http://www.isinet.com/>



Some Web Search Engines and Tools

- AltaVista – <http://www.altavista.com>
- Google – <http://www.google.com>
- Hotbot – <http://www.hotbot.com>
- Yahoo – <http://www.yahoo.com>
- Meta Search Engines
 - Metacrawler – <http://www.go2net.com>
 - Dogpile – <http://www.dogpile.com>
 - Ask Jeeves – <http://www.ask.com>
- Searchenginewatch – <http://www.searchenginewatch.com>
- Mailing List Directories – CATALIST -
<http://www.lsoft.com/lists/listref.html>

TOXNET Exercises

[Note: There is typically more than one “right” approach to answering each of the following questions. Answers, where they are provided, are merely representative, not definitive. Explore.]

TOXICOLOGY DATA FILES

1. What is the CAS registry number and octanol/water partition coefficient of 2,6-dinitrotoluene and what is this chemical used for? [HSDB]

In HSDB, search for **2,6-dinitrotoluene** and click on the 2,6-dinitrotoluene record on the Search Results Page. In the Table of Contents, expand **Chemical/Physical Properties** and click on **Octanol/Water Partition Coefficient**. Expand **Manufacturing/Use Information** and click on **Major Uses**.

2. Has 2,6-dinitrotoluene been shown to be mutagenic in the Ames salmonella test? [HSDB]

MODIFY above search to **2,6-dinitrotoluene ames**, and click on **2,6-dinitrotoluene** record.
Note: You may also wish to check other files, such as GENE-TOX and CCRIS.

3. What is the oral LD50 of caffeine in male rabbits? Also, click on **DETAILS** to view the search strategy. [HSDB]

Search for **oral ld50 caffeine male rabbits** and click on **caffeine** record.
Note: On target hit displays first.

4. Has caffeine been studied as a tumor promoter? Does it cause mutations? [CCRIS, GENE-TOX]

From HSDB caffeine record (above), click on **Other Files**. Select CCRIS. Expand Studies data in Table of Contents and check the boxes for **Tumor Promotion Studies** and **Mutagenicity Studies**. Return to HSDB. Click on **Other Files** again and select GENE-TOX. **Select Mutagenicity Studies**.

5. Which of the toxicology data files contain information on ammonia? What is the Inhalation Reference Concentration (RfC) of ammonia? (Note: the RfC is a non-carcinogenic risk assessment parameter) Also, view the DOWNLOAD options available. [Multi-Data Base and IRIS]

Select the **Multi-Database** option on the TOXNET main page. Search for **ammonia**. Click on the IRIS ammonia record. Expand **Chronic Health Hazard Assessment for Noncarcinogenic Effects** in Table of Contents. Click on **Reference Concentration for Chronic Inhalation Exposure (RfC)**.

TOXNET Exercises (continued)

6. What are some chemicals used in leather tanning and what are their human health effects? [HSDB]

Use the **limits** option of HSDB. Search for **leather tanning** in HSDB. Expand **Manufacturing/Use Information** and check the box for **Major Uses**. Click on several retrieved chemical records to view their “best sections” and click on **Human Health Effects** for these records in the Table of Contents.

7. Does nitrobenzene have any effect on sperm? Find some recent general articles on nitrobenzene. [HSDB, TOXLINE Core]

Search for **nitrobenzene sperm** in HSDB. Click on nitrobenzene record and view **Best Sections**. Click on **Other Files and** click on **TOXLINE Core**.

8. How does the U.S. Environmental Protection Agency characterize the carcinogenicity of methylmercury? [IRIS]

Search for **methylmercury** in IRIS and select the methylmercury record on the Search Results page. Expand category **II. Carcinogenicity Assessment for Lifetime Exposure**. Click on **II.A. Evidence for Human Carcinogenicity**.

9. Find any information on the occurrence or effects of methyl parathion in soil. Search using the chemical’s CAS Registry Number – 298-00-0. [HSDB]

Search HSDB for **298-00-0 soil** in the query box and scan the **Best Sections** of the methyl parathion record.

10. How do the Dutch RIVM (National Institute for Public Health and the Environment) and the U.S. EPA compare in their non-cancer oral risk values for chloroform? [ITER]

Search for **chloroform**. View **Risk Data: Non-Cancer Oral Table**.

11. Use Boolean operators and phrase searching to look for information on lung cancer or bladder cancer in workers, in HSDB.

Enter – (“**lung cancer**” [htox] OR “**bladder cancer**” [htox]) AND worker

TOXNET Exercises (continued)

TOXICOLOGY LITERATURE FILES

1. Search TOXLINE Special for articles by C.N. Pope. Sort retrieval by primary author names. [TOXLINE Special]

Search for “pope cn” in query box. On “Search Results” page, click on “SORT” button and sort by author.

2. Search TOXLINE Special and TOXLINE Core for phosphoric acid. Explore navigating through your retrieval, examining individual records, and going to linked records. [TOXLINE Special & Core]

Search for **phosphoric acid** in query box. Click on **Details** buttons in both databases to view the respective search strategies. Navigate the pages. Click on records of interest and on hot-linked data – e.g. keywords, author names, CAS registry numbers. Check for related records.

3. Find articles focused on the effects of diet on breast cancer. [TOXLINE Special & Core]

Try a **Limits** search. Enter **diet breast cancer** in the query box. Limit to **Titles**. Select **Both** TOXLINE Special and TOXLINE Core.

4. Find journal references on the treatment of arthritis by the anti-inflammatory agent Celebrex. [TOXLINE Core]

Search for **arthritis celebrex** in the query box. Select the TOXLINE Core radio button.

5. Use the EMIC subfile to determine whether peppermint been tested for mutagenicity. Check for English language articles. [TOXLINE Special]

Conduct a Limits search. Select EMIC as a TOXLINE Component and English as a language from the drop down menus. Enter **peppermint** in the query box.

6. Find information on the effects of alcohol on the fetus. [DART Special and DART Core]

Select **Both** DART Special and DART CORE. Search for **alcohol fetus** in the query box.

TOXNET Exercises (continued)

7. Search TOXLINE Core directly on PubMed to find articles on toxicological aspects of jellyfish. Search for articles published from 2000-2003 in English. [TOXLINE Core via PubMed directly].

Go to PubMed at <http://pubmed.gov>. Click on **Limits**. Enter **jellyfish** in the search query box. Limit the search to the toxicology subfile, the publication dates to 2000-2004 and the language to English.

8. Find information on renal failure associated with amanita mushroom poisoning. Look for English language articles published from 1995 to 2004. [TOXLINE Special]

Conduct a Limits search. Enter **amanita renal failure** in the query box. Restrict publication years to 1995-2003. Select English from the dropdown menu.

9. Use the HISTORY feature to look for hospital or medical waste incineration in TOXLINE Special. [TOXLINE Special]

First search for **“hospital waste” incinerat***. (Using quotes looks for the terms together as a phrase. The asterisk is for truncation and searches for words such as incinerate, incineration, etc.) Then search for **“medical waste” incinerat***. Press the HISTORY button and combine your two searches according to the instructions, and using an “OR” operator.

TOXIC CHEMICAL RELEASES

1. How much ammonia was released to the air and water in Milwaukee in 1999?

In TRI99, search for **ammonia** in the “chemical name” query box and for **Milwaukee/WI** in the “facility location (city/state)” query box. Click on “Search.” Click the top, left button “Calculate Release.”

2. How much of the above releases came from Lesaffre Yeast Corporation and in what body of water did this facility discharge ammonia?

After above search, use the browser’s “back” button to return to the “TRI Search Results” screen. Click on the Lesaffre Yeast Corporation record. Click on “Environmental Release of Chemical” in the Table of Contents. Scroll down to “Water Discharge Estimates.”

TOXNET Exercises (continued)

3. What chemicals have been released to the air, in amounts greater than 100,000 pounds, over Old Hickory, Tennessee in 1995 and 1996? By what companies?

Search for **Old Hickory Tennessee** in the “facility location (city/state)” query box. Select **greater than 100,000 pounds** for “total air release.” Results page will display chemicals and companies.

4. Did Agilent Techs’ Newark, California facility transfer any 1,2,4-trichlorobenzene off-site for treatment in 1996? How much? Where to?

In TRI96, search for **1,2,4-trichlorobenzene** in the “chemical” query box, **agilent techs** in the “facility name” query box, and **newark california** in the “facility location (city/state)” query box. Click “Search.” Click on “Off-Site Waste Transfer” in the Table of Contents.

5. What chemicals have been reported released in amounts over 1,000,000 pounds via underground injection in Texas in 1999, and what is the total sum of these releases.

In TRI99, search for Texas as a state under Facility Location, and greater than 1,000,000 pounds as a range. Sorting the results will provide a clear display of the chemicals. Click on the Calculate Release button to view the sum total of the underground injection releases.

6. How many individual TRI98 reports have been filed on barium compounds? Display the U.S. geographical distribution of reported releases.

In TRI98, search **barium compounds** in the chemical query box. Note the number of records retrieved listed at the top of the Search Results page. Click on “Map it with TOXMAP” to view a map of releases.

TOXNET Exercises (continued)

HAZ-MAP

1. What are some high risk tasks associated with the job of carpet installation?

Click on **High Risk Jobs/Alphabetically**. Choose the letter “C” and click on **Carpet Installers**.

2. What are some hazards associated with the use of cobalt in the workplace?

Enter **Cobalt** in query box and click on “agent.” Click on **Cobalt**. Click on **Cobalt** again to view potential hazards. For Extra Credit – highlight a term or phrase (e.g. “cobalt chloride skin allergy” and search **TOXLINE**.

3. What are some hazards of leather tanning?

Perform a “text search” for **leather tanning** in the search query box. Click on first **leather tanning and finishing** as an Industry and then go back and click on **tanning leather** as a Process.

HOUSEHOLD PRODUCTS DATABASE

1. What is in Windex and are there any health dangers associated with it?

Enter **Windex** in query box. Click on your choice of Windex cleaner. View ingredient and health effects information.

2. Compare the toxicities of various pesticides used to treat ants.

Click on the “Products” tab. Click on **Pesticides**, then on **Insecticides** as a Category and **Ant** as a type. View the data on the various products.

3. What stick deodorants include the antibacterial ingredient triclosan?

Click on Ingredients. Enter **triclosan** in query box. Click on triclosan. Scan list of products.

TOXNET Exercises (continued)

WORLD WIDE WEB

1. Explore EPA's voluminous Web site, particularly the **Databases and Software** section located by clicking on their home page's **Information Sources**. Locate IRIS, ECOTOX, the Toxics Release Inventory, and the Safe Drinking Water Information System. Use the Advanced Search box to find documents with **mercury** in the title. [www.epa.gov]
2. Locate a full-text article about the ban on ephedra in the March-October 2004 issue of the **FDA Consumer** magazine. [www.fda.gov]
3. What chemicals are on the list of "Known to be Human Carcinogens" in the National Toxicology Program's Year 2002 10th Report of Carcinogens? [ntp-server.niehs.nih.gov]
4. Find the Agency for Toxic Substances and Disease Registry's TOXFAQ profile on nickel. [www.atsdr.cdc.gov]
5. Check out the National Council for Science and the Environment's Web site and find recent Congressional Research Service (CRS) reports, under their National Library for the Environment section, on **pesticides**. [www.ncseonline.org]
6. Which Florida universities offer graduate programs in toxicology? Check the Society of Toxicology's Resource Guide to Careers in Toxicology (under Public Outreach/Career Resources) [www.toxicology.org]
7. Explore the variety of data sources containing information on acrylonitrile, by searching ChemFinder. [www.chemfinder.com]
8. Where and on what dates will the fourth Society of Environmental Toxicology and Chemistry's World Congress be held? [www.setac.org]
9. What is New Jersey's rank among states in total release hazardous air pollutants? Use Scorecard (from Environmental Defense). Start by clicking on Air/HazardousAir Pollutants. [www.scorecard.org]
10. Use the BIOLOG file (one of Syracuse Research Corporation's Environmental Fate Data Bases – EFDB) to find references on DDT in sewage. [www.syrres.com/esc/efdb.htm]
11. Find some peer-reviewed monographs on arsenic. [www.inchem.org]
12. What are some common side effects of the drug Vioxx? Consult MedlinePlus' Drug Information page (data from the USP). [medlineplus.gov]
13. Who makes Kill Zone Flea and Tick Killer 2000? What are its active ingredients? How have various governmental agencies rated the carcinogenic potential of these ingredients? [www.pesticideinfo.org]
14. How many poison control centers in Texas are certified by the American Association of Poison Control Centers (AAPCC)? What are their addresses? The AAPCC's Poison Center Lists includes a list of certified centers. Find the nation-wide toll-free poisoning emergency phone number. [www.aapcc.org]

